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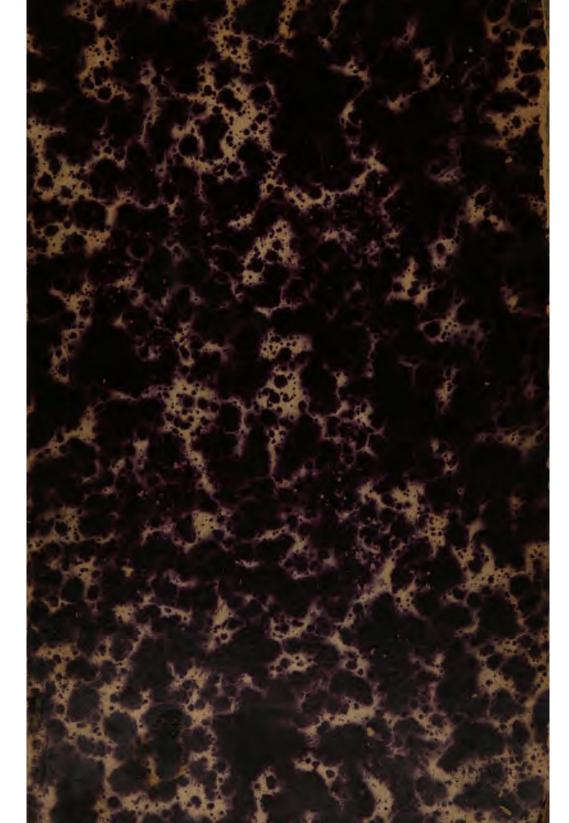
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ILLINOIS GEOLOGICAL SURVEY.

ABSTRACT

OF A

REPORT ON ILLINOIS COALS;

WITH

DESCRIPTIONS AND ANALYSES,

AND A

GENERAL NOTICE OF THE COAL FIELDS.

[PUBLISHED BY ORDER OF THE GOVERNOR.]

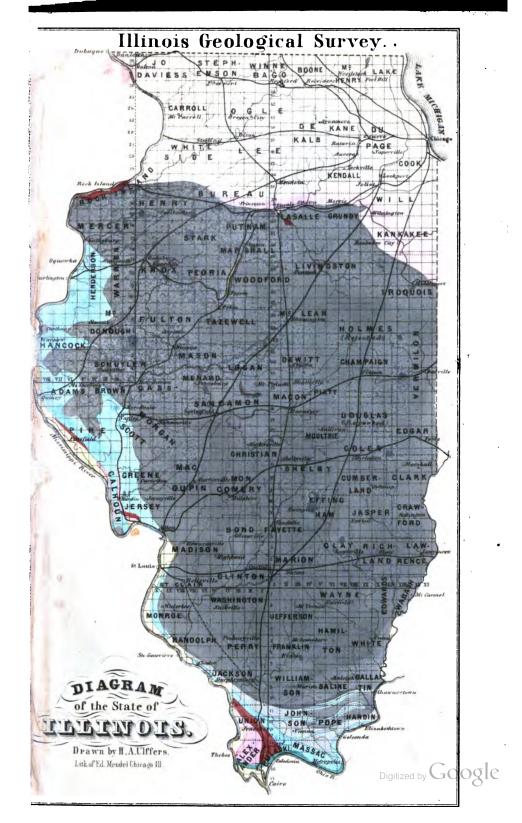
BY J. G. NORWOOD, M. D.,

CHICAGO:

CHICAGO DAILY PRESS STEAM PRINTING HOUSE, 45 CLARK STREET.

1858. 155 /

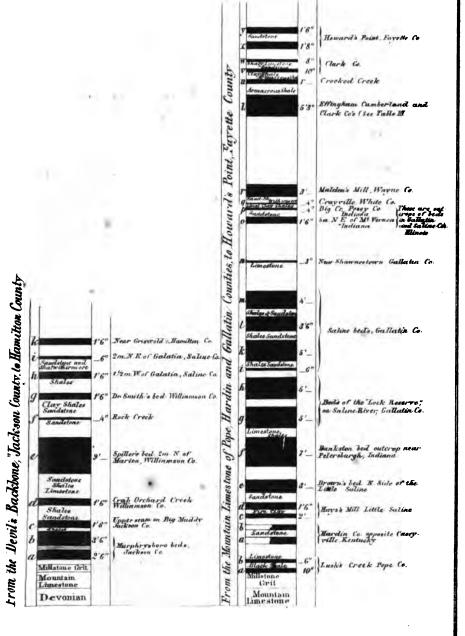
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Illinois Geological Survey

Table II

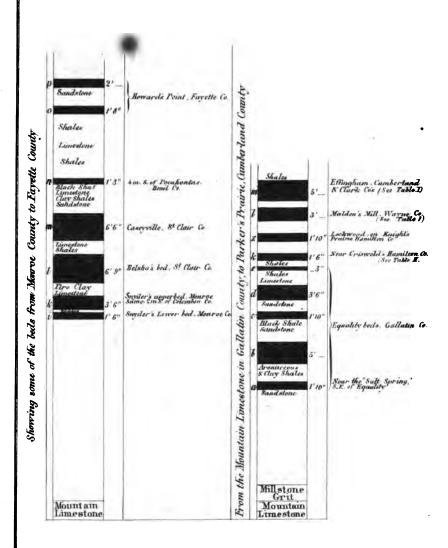
Table 1



Illinois Geological Survey

Table IV

Table III



ILLINOIS GEOLOGICAL SURVEY.

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SPRINGFIELD, ILLINOIS, August 7th, 1857.

HIS EXCELLERCY, W. H. BISSELL, GOVERNOR OF ILLINOIS:

In compliance with your order to prepare and submit to you, for publication, an abstract of the observations made in the Illinois Coal fields during the progress of the State Geological Survey, I respectfully beg leave to report, that I have attended to that duty.

In the following pages you will find a succinct, but complete, description of every Coal that has been analyzed in the State Laboratory up to this date; together with numerous sections of the rocks with which the beds are associated in different parts of the State.

Hoping that it may prove satisfactory to you, I am, Sir,

With the highest respect,

Your Obedient Servant,

J. G. NORWOOD.

ABSTRACT

GALLATIN COUNTY.

SALINE MINES. UPPER BED. "LOCK RESERVE."

Bed four feet thick. Overlaid with six inches of black slate, which is capped with a bed of hard bluish-colored limestone, forming a good roof Coal dull to bright; hard; fracture backly; layers thin; much sulphuret. of iron disseminated through it. Cleaves at angles of 50° and 130°.

	Specific Gravit	y, 1.30	1						
	Loss in coking,	4	39.2	2	P	C. Pa			
	Total weight of	f coke	60.8	3 = 1	0.00	1			
Analysis:-	-Moisture, -	1	21	- 2				8.5	
	Volatile matter	s,		18	-	-	-	30.7	
	Carbon in coke	, -	-	4		Car.		57.8	
	Ashes, -		0		-	1		3.0	
	Carbon in the	coal, 6	6.30	¥				100).0

SALINE MINES-UPPER BED.

Th	ickne	88, fou	r feet.			
Loss in coking,	4	2.4				
Total weight of c	oke, 5	7.6 ==	100.0			
Analysis.—Moisture, -		-	-	-	•	2.6
Volatile matters,	-	•	•	-	-	39.8
Carbon in coke,	-	-	•	-	-	56.1
. Ashes,	-	•	•	-	-	1.5
Carbon in the c	oal, 5	8.85				100-0

SALINE MINES, FIVE FEET SEAM.

Bed five feet thick. Coal hard; compact; bright; occasionally slightly iridescent; fracture hackly; layers thin. Contains thin vertical seams

of sulphuret of iron.—Covered with a roof of dark-colored shale. The floor was not exposed when the examinations were made.

Specific gravity, 1.2925					•
Loss in coking,	•	-	•	-	40.8
Total weight of coke,-	•	•	•		$59.2 = 100 \cdot 0$
AnalysisMoisture,	-	•	-	-	8.0
Volatile matters, -	-	-	-	•	32.8
Carbon in coke,	•		•	-	55.5
Ashes,	-	-		-	3.7
			•		100.0
Carbon in the coal, 63·10	,				

SALINE MINES, SECOND BED.

Bed three feet six inches thick. Coal bright; hard; rather brittle; layers thin, and separated with carbonaceous clod. Contains vertical seams of carbonate of lime. Cleavage cubical.

Specific gravity, 1.2	2892					
Loss in coking,	36	·8			• •	
Total weight of cok	e, 63	2 =	100.0)		
Analysis.—Moisture,	•	-	-	-	-	6.5
Volatile matters,	-	÷	-	-		30.3
. Carbon in coke,	•	-	-	-	•	55.2
Ashes,	•	-	-	-	-	8.0
Carbon in the coal,	60.7			٠		100.0

BOWLES' MINE .- " MASON ENTRY."

Bed three feet six inches to four feet in thickness. Overfaid with a few inches of shale, which is covered with two feet six inches of limestone, forming a good roof. Underlaid with fire clay. Coal hard and compact; bright; in thin layers, with a very small amount of sulphuret of iron disseminated through the joints. Swells up and spatters in coking.

Loss III coking,		9.2	0	•				•				
Total weight of coke	, (60	2	==	10	0.0)					•
Analysis.—Moisture,		-		-		-		-		-	2.0	
Volatile matters,	-		-		•		•		-		37.8	
Carbon in coke, -		•		-		•		•		•	53.2	
Ashes (white),	-		-				-		-		7.0	
Carbon in the coal												100.0

Specific gravity, 1.303

e . EQUALITY.—(LOWER BED.)

This bed is worked in the river bottom, at the old "Hicks Mill." The shaft is about fifty feet in depth. Thickness of the bed five feet. Coal bright; hard; compact; with numerous carbonized coal plants between the layers. Overlaid with black slate. Floor not ascertained, because of water in the shafts.

Specific gravity, 1·2988
Loss in coking, 85·8
Total weight of coke, 64·2 = 100·0

Analysis.—Moisture, - - - - 1·2
Volatile matters, - - - 34·6
Carbon in coke, - - - - 52·2
Ashes, - - - - - 12·0
Carbon in the coal, 58·2

EQUALITY .-- (TOP SEAM .-- "MARTIN'S.")

Bed three feet six inches thick. Coal very bright; hard; compact; fracture even; layers thick, with partings of carbonaceous clod, and occasional vertical streaks of carbonate of lime. Cleavage rhomboidal. Overlaid with black slate, containing nodules and large masses of "bastard." limestone. Underlaid with clay and shales.

Loss in coking, 41'38

Total weight of coke, 58'62 == 100'0

Analysis.—Moisture, - - - 2'80

Volatile matters, - - - 38'58

Carbon in coke, - - - - 51'92

Ashes (drab), - - - 6'70

Carbon in the coal, 62'5

EQUALITY (SAME BED.)

Specific gravity, 1.8054
Loss in coking, 37.7Total weight of coke, 62.3 = 100

Specific gravity, 1.2758

Analysis.—Moisture,	-	-			5.7
	-	-	•		32· 0
Carbon in coke,	-	-	-		59.8
Ashes,	-	-			2.5
Cerhon in the coel	89.5			•	10 0 ·0

EAGLE CREEK MINE.

Thickness of the bed four feet six inches. Overlaid with ten inches of black slate, which is capped with clay shale, overlaid with eight feet of thin-bedded sandstone. Coal, in general appearance, bright; hard; compact; fracture even; layers thick, alternately bright and dull, and occasionally separated with carbonaceous clod. Contains short thin vertical seams of carbonate of lime.

•	Specific gravity, 1.2364										
•	Loss in coking,	37.0		•							
	Total weight of coke,	63.0	== 10	0 ·0							
Analysis :-	-Moisture,	-		•		1.0					
	Volatile matters, -	-	-	-	-	86.0					
	Carbon in coke, -	•	•	•		57.2					
	Ashes (gray),	-	•			5.8					
•	Carbon in the coal, 67	7:01		•			100:0				

SALINE COUNTY.

COAL BRANCH OF BANKSTON CREEK.

Bed seven feet thick. Overlaid with one foot of black slate, and that with seven feet of bluish limestone, forming a good roof. Floor not ascertained. Coal variable, from dull to bright; hard; compact; fracture uneven; layers thick, with thin seams of sulphuret of iron between them. The joints contain, occasionally, vertical streaks of carbonate of lime.

•	Total weight of		. gg.	-	100.	^		
	TOWN WEIGHT OF	CORC	, 00	z —	100	U		
Analysis:-	-Moisture, -	-	•	-	٠.			5.3
	Volatile matters	3,	-	-	-	•	-	34.5
	Carbon in coke	, -	-	-	-			50.6
	Ashes, -	•	•	-	-	-	-	9.6
								100:0

Specific gravity, 1 2873

Carbon in the coal, 59.0

"At Hays' Mill, on the Little Saline," there is a coal seam in the bed of the creek, thickness unknown, as it has not been cut through. Its roof is a bed of fire clay, twenty-two inches thick. The roof of this bed is sandstone. Dip. 5°. N. W."—Henry Pratten's Notes, 1853.

[&]quot;HAYS' MILL."-"LITTLE SALINE."

Specific gravity, 1.4	955	
Loss in coking,	82·40	
Total weight of coke	$e_{i} 67.60 = 100.0$	
Analysis : Moisture,	· · · · ·	4.1
Volatile matters,		28.3
Carbon in coke, -		57.6
Ashes (dark red),		10.0
Carbon in the coal,	57.6	100.0

WILLIAMSON COUNTY.

DR. SMITH'S MINE.

Thickness of bed one foot six inches. Coal dull; fracture hackly; layers thin, and separated with carbonaceous clod. The vertical joints contain plates of carbonate of lime. There is in this bed a seam of light-colored iron pyrites, which was mistaken for silver by those interested in the land. "Cokes badly."—H. P.

Specific gravity, 1.31	97	,		
Loss in coking,	39.38	•		
Total weight of coke,	60.62 = 100.0			
Analysis: Moisture,		•	- 3.30	
Volatile matters,			36.08	
Carbon in coke, -		-	- 51.92	
Ashes (reddish brown	n),	•	8.70	
Carbon in the coal. 5	66.27			100.00

SPILLER'S MINE .- TWO MILES NORTH OF MARION.

Bed nine feet thick, with a band of iron pyrites three inches in thickness near the bottom of the seam. Overlaid with four feet of slate, which is capped with a bed of limestone. This magnificent coal seam has only been worked by stripping. Coal bright; iridescent; brittle to hard; layers thick, and separated with carbonaceous clod. Contains a few vertical seams of carbonate of lime, and a few vertical plates of sulphuret of iron.

Specific gravity, 1.2825
Loss in coking, 43.1
Total weight of coke, 56.9 = 100.0

Analysis:—Moisture, -	-	٠.	-	-	-	6.2
Volatile matters,	•	-	-	-	-	36.9
Carbon in coke, -						54.9
Æ shes,	-	•	-	<i>:</i>	-	2.0
						100.0
Carbon in the coal,	57· 5					. •

JOHNSON COUNTY.

JOEL JOHNSON'S COAL BED.

Coal dull; soft; fracture uneven; layers thin and easily separable, with carbonaceous clod between them. Joints stained with oxide of iron. This bed of coal is exposed in the bottom of a creek in the N W ½ of Sec 13, T 12 S, R 3 E. Thickness not known. Where it outcrops, it could only be worked by "stripping" for an area of many acres. The coke is good.

Specific gravity, 1.4446
Loss in coking, 25.06
Total weight of coke, 74.94 == 100.00

Analysis: - Moisture,		-	-	-	-	-	1.60
Volatile matters,	-		-	•	-	-	23.46
Carbon in coke, -							47.84
Ashes (white,)	-		-	•	•		27.10
Carbon in the coal	, 61	• ·2					100.00

JACKSON COUNTY.

MURPHRYSBOROUGH BED .- "BIG MUDDY."

This bed varies in thickness from seven feet six inches to nine feet. It is divided by a seam of black shale, from one foot eight inches to two feet in thickness. The average depth of the coal is six feet. Coal bright; hard; fracture hackly; layers separated with carbonaceous clod. Contains a few short vertical seams of carbonate of lime. Cleavage rhomboidal. Overlaid with twenty-two feet six inches of shales, and underlaid with clay.

Specific gravity, 1·2933 Loss in coking, 37·7 Total weight of coke, 62·3 == 100·0

Analysis :Moisture,	-	. ´.			-	6.5
Volatile matters,	-	-	•	-	•	31.2
Carbon in coke, -	٠.	-	•	-	•	60.8
Ashes,	•	. -	•	•	•	. 1.5
Carbon in the coal,						

HAMILTON COUNTY.

SHASTEEN'S MINE.

Thickness one foot six inches. Overlaid with black slate. Floor not ascertained. Coal rather dull, with a few bright spots; hard; compact; fracture even; layers alternately thick and thin. Contains a few vertical seams of carbonate of lime, and a very small amount of sulphuret of iron in the horizontal partings.

or district.	Specific gravity, 1.8	3233			
	Loss in coking, Total weight of coke	38·94 e, 61·06 == 1	00.00		
Analysis:	-Moisture, -				5.30
14000	Volatile matters,			-	33.64
12 3	Carbon in coke,			-	53.56
- 68	Ashes (pale brown)	, - -			7.50
1000	200				100.00
4	Carbon in the coal,	54.85			

PERRY COUNTY.

COL. ASHLEY'S DU QUOIN BED.

Thickness of coal six feet six inches. Overlaid with bituminous shale. Underlaid with fire clay. Coal, very bright; hard; compact; fracture even; layers thick, and separated with very thin streaks of carbonaceous clod. Contains a few vertical plates of carbonate of lime, which are, however, very short. Swells up and spatters in coking.

	Specific gravity, 1.246	
	Loss in coking, 48.9	•
	Total weight of coke, 51·1 = 100·0	
Analysis:-	Moisture	8.5
	Volatile matters,	40.4
	Carbon in coke,	48.1
	Ashes (light gray),	3.0
	Carbon in the coal, 59:6	100·0

MONROE COUNTY.

SNYDER'S MINES .--- UPPER BED.

Thickness of coal three feet six inches. Overlaid with a bluish-colored micaceous sandstone. Rests on a bed of white clay. This bed underlies the beds worked at Belleville, St. Clair county. Coal bright and dull in alternating layers; hard and brittle; fracture even; layers alternately thick and thin, with carbonaceous clod between them. The vertical joints contain carbonate of lime, stained with exide of iron. Cleavage vertical.

SNYDER'S MINES .- LOWER BED.

Thickness one foot six inches. Overlaid with seventeen feet of blue shale, which is capped with five feet of blue micaceous sandstone. This is the lowest bed in Monroe county, and underlies the beds worked in St. Clair county.

Specific gravity, 1.2825
Loss in coking, 41.0
Total weight of coke, 59.0 = 100.0

Analysis: Moisture, -	-	-	-		•	-	9.0	
Volatile matters,		-	-	•	٠.	-	32.0	
Carbon in coke,	-	-	-	-	•	-	$52 \cdot 2$	
Ashes,		•	٠	•		•	6.8	
•								100.0
Carbon in the coa	al,	52.2						

ST. CLAIR COUNTY.

CASEYVILLE MINES .-- "ILLINOIS COAL COMPANY."

Thickness of coal, six feet. Overlaid with ten inches of slate, which is capped with over five feet of limestone. Underlaid with fire clay. Coal bright; hard; fracture even; layers alternately thick and thin, and separated with very thin seams of carbonaceous clod. The joints contain thick vertical seams of carbonate of lime. This bed is troubled with "horse-backs," and is occasionally interrupted with "clay slips." In some of the entries "creeps" occur. It is one of the best mines in the State, so far as locality and facility for working are concerned.

Specific gravity, 1	.304					
Loss in coking.	89	8				
Total weight of co	ke, 60	2 ==	100.0			
Analysis : Moisture,		-	•	-	-	6.0
Volatile matters,	•	•	-	-	•	33 ·8
Carbon in coke,	٠.	-	-	-	-	55· 2
Ashes (pale red),	-	-	-	-	•	5.0
Carbon in the coal	l. 5 5·8					 100·0

ANDREAS PFEIFFER'S PLACE.

Thickness of coal, eight feet. Overlaid with one foot of bituminous slate, which is capped with six feet of limestone. Underlaid with fire clay. Coal dull on its vertical face; bright and iridescent in the horizontal seams; brittle; fracture uneven; layers thick. It contains a few short vertical plates of carbonate of lime.

Speci	fic gravity, 1	·293						
Loss i	in coking,	44.	3				•	
Total	weight of co	ke, 55°	7 =	100.0)		,	
Analysis : Moist	ure,	-	-	-	-		8.5	
Volat	ile matters,	-	•	-	•	-	35.8	
Carbo	n in coke,	-	•	•	-	-	51.2	
Ashes	(red), -	•	. ·	•	•	-	4.5	
Carbo	n in the coal	. 57.5						100.0

BELLEVILLE BED .- VARIOUS OPENINGS.

Thickness of coal varies from six to eight feet. Overlaid with a thin seam of shale, which is capped with four feet of limestone. Underlaid with fire clay. Coal very bright; hard; compact; layers thin, and not easily separable, with a small amount of carbonaceous clod between them. Contains thin vertical seams of carbonate of lime, which are very irregular in their distribution. Coke good.

	Specific gravity, 1.2	68							
	Loss in coking,	45	0						
	Total weight of coke	e, 5 5.	0 =	= 10	0-0				
Analysis:-	-Moisture,	٠.	•	-	-	-			5.5
*	Volatile matters,	-	-	-		•	-		39.5
	Carbon in coke, -	-		-	-	-		-	49.6
	Ashes (gray), -	-	-	-		•	-		5.4
	Carbon in the coal,	54·6							100.0

BELSHA'S MIDDLE DRIFT.

Thickness of the coal, six feet nine inches. Overlaid with one foot nine inches of shales, which are capped with a bed of limestone. Underlaid with a few inches of fire clay, which rests on a bed of gray marl. Coal bright, with thin vertical seams of carbonate of lime.

Specific gravity, 1.29	66
Loss in coking,	43.66
Total weight of coke,	56.84 = 100.00

Analysis:-	-Moisture, -	-		-		-		-	•	-		-	8.10
•	Volatile matters,		-		-				-		-		35.56
	Carbon in coke,			-		-		-		-		-	47.74
,	Ashes (gray),		-		-		•				-		8.60
•	Carbon in the coa	1 2	4.	ĸ۸									100 00

DILG & KEMPFF'S MINE.

Thickness of the bed, seven feet. Overlaid with three inches of coal shale, which is capped with fifteen feet of limestone. Underlaid with fire clay. Coal (top bed) bright; hard; compact; fracture conchoidal; layers thick. Contains thin seams of carbonate of lime in both the vertical joints and horizontal partings.

(Top Coal)

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ď.

Specific gravity, 1.2843
Loss in coking, 45.54
Total weight of coke, $54.46 = 100.00$
Analysis:Moisture, 5.10
Volatile matters, 40 44
Carbon in coke, 47.66
Ashes (white), 6.80
Carbon in the coal, 59 09

DILG & KEMPFF'S MINE.

(Middle Coal.)

Specific gravity, 1.3847

Loss in coking,	4	2.3	8						
Total weight of col	ce, 57	7:65	2 =	= 10	0.00	0			
Analysis:-Moisture, -	-			٠.		•		4.20	
Volatile matters,	-	-		: '	٠.			38.18	
Carbon in coke,	-		-			-	-	49.02	
Ashes (white),	-	-		-			-	8.60	
Cerhon in the coel	84.9	a							100.00

DILG & KEMPFF'S MINE.

(Bottom Coal.)

Coal rather dull; hard; compact; fracture even; layers thin and not easily separable, with occasional thin seams of carbonaceous clod between them. Contains thin vertical seams of carbonate of lime. Coke good.

	Specific gravity, 1.2	3531						
	Loss in coking,	39	.63					
	Total weight of col	ce, 60)·37 =	= 100	.00			
Analysis:	-Moisture,	-	-	-	•	-	4.00	
	Volatile matters,	•	-	,	• .	-	\$5.63	
	Carbon in coke,	-	-	-	-	-	36.77	
•	Ashes (gray),	-		-	-	•	23.60	
	Carbon in the coal,	49.3	8					100.00

W. B. CHURCHILL'S MINE.

Thickness of the bed, six feet. Coal bright; hard; fracture even; layers thick, with partings of carbonaceous clod. Contains a few thirm vertical seams of carbonate of lime, and thick horizontal ones of sulphure t of iron. Cleavage vertical. The undulation in this bed will not interfere, materially, with its being worked profitably. Overlaid with two inches of clay, capped with three feet of limestone. Underlaid with fire clay.

Specific gravity, 1:315
Loss in coking, 45:40
Total weight of coke, 54:60 = 100:00

Analysis : Moisture,	-	-							,		6.00
Volatile matters,			-		•		-		-		89.40
Carbon in coke,		-		-		-		-		-	45.70
Ashes (white),	-		-		-		-		-		8.90
Carbon in the coal	. 5	2.6	3 ·								100.00

MADISON COUNTY.

JEFFREY'S MINE.

Thickness of the bed, two feet six inches. Coal bright; hard; compact; fracture tolerably even; layers thin, regular, and separated, occasionally, with very thin seams of carbonaceous clod. There is but little carbonate of lime in the joints. Overlaid with eleven inches of black slate, which is capped with shales. Underlaid with fire clay.

Specific gravity, 1.2859	
Loss in coking, 48.75	
Total weight of coke, $51.25 = 100.00$	
Analysis:—Moisture,	- 11.00
Volatile matters,	37.75
Carbon in coke,	- · 47·85
Ashes (gray),	3·90 100·00
Carbon in the coal, 51 48	

RICHARD CARTLIDGE'S MINE.

Thickness of the coal varies from four feet to six feet. Coal bright; brittle; layers thin, and alternately dull and bright, with occasional sepa-

rations of carbonaceous clod; easily separable in the horizontal partings. Fracture even to hackly. Contains thin vertical seams of sulphuret of iron. Overlaid with six inches of marly clay, which is capped with ten feet of limestone. Underlaid with fire clay.

Specific gravity, 1	8187		
Loss in coking,	44.39		
Total weight of col	ke, 55.61 = 100.00	•	
sis:—Moisture,	. .		8·80 `
Volatile matters,		-	86.09
Carbon in coke, -	. 	•	45.01
Ashes (gray), -		-	10.60
Carbon in the coal,	, 50 ·8 8		100.00

CHARLES GROSHANG'S MINE.

Thickness of the bed, from two feet six inches, to three feet. Coal alternately bright and dull; hard; fracture hackly; layers thick, wavy, and separated with thin layers of carbonaceous clod.

Specific gravity, 1.3	221
Loss in coking,	37.55
Total weight of coke	62.45 = 100.00

Analy

Analys	sis:—Moisture, -							-		-		-	7.50	
-	Volatile matters,						-		-		-,		80.05	
	Carbon in coke,	•		-		-		-		-		•	54.85	
	Ashes (brown),		-		-				-		-		7.60	
•	Carbon in the cos	al. <i>t</i>	56.	27										100.00

DUNFORD'S MINE -- (NEAR ALTON.)

Coal bright; hard; compact; fracture uneven; layers thick, with partings of carbonaceous clod. Contains thin vertical seams of carbonate of lime.

Specific gravity, 1.2587
Loss in coking, 47.26
Total weight of coke, 52.74 == 100-00

Analysis:—Moisture, -			-		-		-			-	5.80
Volatile matters	١,	•		•		-		•			41.46
Carbon in coke,	-		-		-		•			-	47-44
Ashes (gray),	-	-		•		-		-	-		5.80
Carbon in the c	oal.	54.	62								100.00

EMERSON & RYDER'S MINE.

Specific gravity, 1.319	91						
Loss in coking,	42.	60					
Total weight of coke,	57.4	ŧ0 =	= 10	0.00			
Analysis : Moisture,	-					-	10.30
Volatile matters, -		-		-		•	32.80
Carbon in coke, -	-	-		-	-	-	58.90
Ashes (reddish brown),	•	-	-		-	8.50
Cowhen in the seel Ki							100.00

"WOOD RIVER COAL MINING COMPANY."

Thickness of the bed, six feet. Overlaid with a few inches of clay shale, capped with fourteen feet of limestone. Underlaid with fire clay. Troubled with "horse-backs;" not so much, however, as to prevent the mines from being worked profitably. It is one of the best mines in Madison county.

(Top Coal.)

Coal tolerably bright; brittle; layers thin, and separated with carbonized coal plants. Fracture even. Contains rather thick vertical seams of carbonate of lime, and a few streaks of sulphuret of iron between the horizontal layers.

•	Specific gravity, 1.2	1916			•	
	Loss in coking,	55.3				
	Total weight of coke	44.7 == 100)•0			•
Analysis :-	-Moisture,				11.0	
	Volatile matters,	· ·	•	-	44.3	
	Carbon in coke, -		; -		87.2	
	Ashes (gray), -	· · -	-	•	7.5	
	Carbon in the coal,	45· 4 5		•		1000

"WOOD RIVER COAL MINING COMPANY."

(Middle Coal.)

Coal bright; brittle; fracture even; layers thin, and not easily separated, with very little carbonaceous clod between them. Contains thick vertical plates of carbonate of lime, and a few thin ones of sulphuret of iron.

Specific gravity,	1.3158	
Loss in coking,	50.0	
Total weight of	coke, 50·0 = 100·0 .	
Analysis:-Moisture, -		10.0
Volatile matters,		40 ·0
Carbon in coke,		42.7
Ashes (pink), -	· · · · ·	7.3
		100.0
Carbon in the co	oal, 49·08	

COOK'S MINE.

This is the same bed that is worked by the "Wood River Coal Mining Co.," and the appearance of the coal is the same. It differs slightly, however, in composition.

Specific gravity, 1·3017
Loss in coking, 51·15
Total weight of coke, 48·85 = 100·0

Analysis: Moisture,	-	-	-	-	-	8-00
Volatile matters,						48.15
Carbon in coke,		•	-'	-	•	38.85
Ashes (gray), -	-	-	-	-	-	10.09
Carbon in the coal.	47.1					100 00

EDWARDSVILLE MINE.

This bed has not been examined by any one connected with the survey. The specimens brought to the state laboratory are bright; brittle; fracture uneven; layers alternately thick and thin. Contains vertical seams of carbonate of lime.

Specific gravity, 1.346
Loss in coking, 46.85
Total weight of coke, 53.15 == 100.00

Analysis :- Moisture, -	-		-		•	-					10-00
Volatile matters,		•		•	-		•		•		86.85
Carbon in coke,	-		-			-		•		•	49.75
Ashes (purplish),		-		-	•		•		•		8·4 0
Carbon in the coa	l, £	38.	07								100.00

RANDOLPH COUNTY.

RITCHIE'S COAL BED.

Thickness four feet six inches. Overlaid with limestone. Underlaid with clay. Coal hard and compact; fracture slightly conchoidal. Contains very minute seams of carbonate of lime in the joints, and thin seams of sulphuret of iron, disposed both vertically and horizontally.

~	boome P.	,										
1	oss in col	ing,		46.1								
r	otal weigh	t of c	oke,	53.9	=	100	•0					
Analysis:—l	loisture,	٠.	-	-	-		-		-		8.0	
7	olatile m	atters,		-	-	-		-		-	38.1	
0	arbon in e	oke,	٠	-	-		•				50.9	
A	sbes (ver	y dark	gra	у),	-	-		•		-	8.0	
c	arbon in	the c	oal, i	34·17								100.0

Specific gravity, 1:3021

CALHOUN COUNTY.

JOHNSON'S PLACE.

Thickness of the bed, two feet four inches. Overlaid with six inches of black slate, passing into gray shale. Floor not ascertained. Coal dull; brittle; fracture tolerably even; layers indistinct; slightly iridescent; joints much stained with oxide of iron, derived, probably, from the decomposition of a sulphuret of that metal. Coke tolerably good.

•	Specific gravity, 1-2631												
	Loss in coking, 45.7												
	Total weight of coke, 54.8 = 100.0												
Analysis:-	-Moisture,	1.8											
	Volatile matters, 40)·9											
	Carbon in coke, 49)·1											
	Ashes (brown),	5 ⋅2											
	Carbon in the coal, 53.06	100 ·0											

MACOUPIN COUNTY.

HODGES' CREEK BED.

Thickness of the bed, five feet six inches. Overlaid with one foot of black slate, which is capped with two feet of bluish-colored limestone. Underlaid with shale. Coal bright; hard; compact; fracture uneven; layers thick, with partings of carbonaceous clod. Contains vertical seams of carbonate of lime. Coke good.

Specific gravity, 1·2797

Loss in coking, 43·48

Total weight of coke, 56·52 == 100·00

Analysis:—Moisture, -	-		-		-		-	-		٠.	6.20
Volatile matters,		-		-		-			•		36.98
Carbon in coke,	-		-		-		-	-		-	48.72
Ashes (brown),		-		-		-			-		7.80
Carbon in the cos	.1	52.	Q								100.00

PIKE COUNTY.

HOUSEWORTH'S COAL BED.

Thickness one foot six inches. Overlaid with clay, containing masses of rounded limestone. Underlaid with a bed of bluish-colored clay. Coal rather dull; brittle; layers alternately thick and thin; fracture uneven. Contains a great quantity of sulphuret of iron mixed with coal dust, disposed horizontally.

Specific gravity, 1·2203 Loss in coking, 49·5 Total weight of coke, 50·5

Analysis:Moisture, -		-	_	٠.		-	5.0
Volatile matters,				•	-	-	44.5
Carbon in coke,	-	-	-	-	-	-	45-5
Ashes (white),	•	•		-	-	-	5.0
Carbon in the co	.1 KQ.	.0					100.0

JACKSON'S MINE.

Thickness of bed one foot six inches, to one foot eight inches. Coal dull; brittle; fracture exceedingly irregular; layers thin, and separated

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with carbonized coal plants. This bed is eight miles north of Pittsfield. The analysis was made of a portion of the bed that resembles, in appearance, carbonized wood. The bituminous portion is like Houseworth's coal.

1	specinc gravity,	1.44	84						
	Loss in coking,		14.1	•					
	Fotal weight of c	oke,	85.9	= 1	00.0				
Analysis:	Moisture, -	-	•	-	-	-	-	2.0	
•	Volatile matters,					-	•	12-1	
	Carbon in coke,	-	-	-	-	-		56.9	
•	Ashes (gray), -				•	-	-	29.0	
1	Carbon in the co	al, 5'	7.5						100.0

GREEN COUNTY.

DRAKE'S MINE.

Thickness of the bed, from two feet four inches, to two feet eight inches. Coal rather dull; brittle; fracture hackly; layers thin, and separated with carbonaceous clod. Contains vertical plates of carbonate of lime, which are confined principally to a thin bright band of the bed. There is a little sulphuret of iron disseminated through the mass of coal. Coal good, but dirty.

	Specific gravity, 1	angè							
	Loss in coking,	40	47						
	Total weight of col	ce, 59	·53 =	== 1	00.00	0			
Analysis:-	-Moisture,	-		•	-		-	6.00	
	Volatile matters,	-				-	-	84.47	
	Carbon in coke, -	-		-	-		-	48.93	
	Ashes (gray), -	-	•		•	-	•	10.60	
	Carbon in the coal,	59-79	Ð		•				100.00

SANGAMON COUNTY.

The beds of coal at present opened in this county vary from one foot eight inches, to two feet in thickness. All the coal is obtained by "stripping," or, to use another term, by quarrying. Fourteen or fifteen openings have been made. The coal taken from most of them is of the same quality.

SANDERS' COAL.

Coal rather dull; hard; somewhat brittle; fracture hackly; layers thick, with partings of carbonaceous clod. Contains vertical seams of both carbonate of lime and sulphuret of iron; also, a few thin horizontal layers of iron pyrites.

	13
	Specific gravity, 1.2468 Loss in coking, 48.14 Total weight of coke, 51.86 == 100.00
Analysis:-	-Moisture, 5 · 60
••	Volatile matters, 42-54
	Carbon in coke, 42.86
	Ashes, 9.00
	Carbon in the coal, 50·11 ———————————————————————————————————
	MINE NEAR SPRINGFIELD—(Owner not known).
	Specific gravity, 1.2839
	Loss in coking, 58.9
	Total weight of coke, 46·1 = 100·0
Analysis:-	-Moisture, 12·0
•	Volatile matters, 41.9
	Carbon in coke, 42.8
	Ashes (dark gray), 8:3
	Carbon in the coal, 45.7 ————————————————————————————————————
	puffenberger's mine (near springfield.)*
	Specific gravity, 1.26
•	Loss in coking, 50.68
	Total weight of coke, 49.82=100.0
Analysis:	Waistana 11.50
•	Moisture, 11·50 Volatile matters, 39·18
	Carbon in coke, 43.62
	Ashes (dark brown), 570
	100 00
	Carbon in the coal, 49.8

^{*}Note.—This coal contains a greal deal of sulphuret of iron.

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SCHUYLER COUNTY.

PLEASANT VIEW.

Thickness of the coal 4 feet. Overlaid with sixteen feet of shale. Underlaid with fire clay. Coal bright; hard; fracture conchoidal; layers thin, some of them separated with extremely thin seams of carbonaceous clod. Contains a few vertical seams of carbonate of lime, which are slightly stained with oxide of iron. Coke good.

Lose	Loss in coking,				40.60												
Tota	Total weight of coke,				•40	=	100	00٠									
Analysis : Moi	sture,		-			-	-		-		-	6.0					
Vol	atile ma	tters,			-		•	٠.		-		84.6					
Cari	bon in c	oke,	-			-	•				-	52.9					
Ash	es (dee	p red)),	•	-		-	-		-		6.2					

Carbon in the coal, 57.8

Specific gravity, 1.286

MINE NEAR RUSHVILLE.

Thickness of coal, four feet. Overlaid with three feet of black slate, which is capped with one foot of limestone. Coal rather dull; hard; somewhat brittle; fracture hackly; layers thin, with partings of carbonaceous clod. Contains irregular seams of carbonate of lime, stained with oxide of iron.

Loss in coking, Total weight of co	oke		·6 ·4 =	= 1	100.0)		
Analysis:—Moisture, - Volatile matters,	-			•	-		-	
	-	•		-			-	

Carbon in the coal, 51.79

Specific gravity, 1.303

SCOTT COUNTY.

EXETER MINES.

Thickness of beds, two feet eight inches. Overlaid with slate. Underlaid with eight inches of clay, and that with thick beds of limestone.

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100-0

4·5 37·1 46·1

100.0

Coal bright; brittle, fracture uneven; layers alternately thick and thin, with partings of carbonaceous clod. Contains thin vertical seams both of carbonate of lime and sulphuret of iron. Coke very good.

Specific gravity, 1·288
Loss in coking, 42·37
Total weight of coke, 57·63 = 100·00

Analysis : Moisture, -			-				-		-			12.10	
Volatile matters	,	-		-		-		-		-		80.27	
Carbon in coke,	-				•		-		-		-	50.13	
Ashes (red), -		-		-		-		•		-		7.50	
Carbon in the co	-1	Ka.	40										100.00

SCOTT COUNTY.

BARKER'S COAL.

Coal bright; hard; fracture uneven; layers thin, and separated with carbonized fossil ferns. Contains thin vertical seams of carbonate of lime and sulphuret of iron.

Specific gravity, 1.2396
Loss in coking, 42.6
Total weight of coke, 57.2 = 100.0

Analysis:Moisture,	-		-	-	-		5.2	
Volatile matters,-		-		-			37·8	•
Carbon in coke, -	-		•		•	-	52.2	
Ashes (light brown)), -				-		5.0	
• • • • • • • • • • • • • • • • • • • •								100.0
Carbon in the coal,	54·8							

FROST'S COAL.

Coal bright; hard; compact; layers thin, and separated with a little carbonaceous clod. Contains thin vertical seams of carbonate of lime and sulphuret of iron.

Specific gravity, 1 2888
Loss in coking, 46 37
Total weight of coke, 53 63 = 100 00

Analysis : Moisture, -					-	_		.=.		8.20
Volatile matters,	,	-		-			-			87.87
Carbon in coke,										46.53
Ashes (red), -										7.10
· Carbon in the co	-1	K1.6	20							100:00

ADAMS COUNTY.

HIGBY'S COAL

Thickness of the bed, two feet six inches. Overlaid with fifteen feet of gray shale. Underlaid with fire clay. Coal dull; hard, fracture even; layers thin, with very thin seams of carbonaceous clod between them. This bed is occasionally three feet in thickness, and has a capping of six inches of blue clay, with a bed of black slate overlaying it. (Further investigation is needed to ascertain whether there are not two beds of coal in the localities where the investigations were made by Mr. Worthen.)

Specific gravity, 1.3354
Loss in coking, 48.4
Total weight of coke, 51.6 = 100.0

Analysis	:-Moisture, -						10.0
	Volatile matters,		-		•		38·4
	Carbon in coke, -	,		• .		•	41.2
	Ashes (yellow),		-		-		10.4
	Carbon in the coal 4	ı R					100.0

BASSETT'S COAL.

Thickness of the bed, from one foot four inches, to one foot six inches. Overlaid with one foot six inches of black slate. Floor not ascertained. Coal bright; brittle; fracture uneven; layers thick, and separated with a little carbonaceous clod. Contains a few very thin layers of sulphuret of iron, and some thin vertical seams of carbonate of lime.

Specific gravity, 1 2684
Loss in coking, 42 52
Total weight of coke, 57 48 = 100 00

Analysis:—Moisture,					-	9.20	
Volatile matters,		•		-		83.82	
Carbon in coke,	٠.		٠.		-	51.48	
Ashes (pale red),		-		•		6.00	
~						 10	00.00
Carbon in the coal	L 55	91					

JERSEY COUNTY.

LANGLEY'S MINE.

Thickness of the bed, five feet. Overlaid with two feet of black slate, which is capped with three feet of limestone. Underlaid with fire clay. (The death of the Geological Assistant in the Illinois State Survey, Mr. Henry Pratten, prevents me from giving at present more than this paragraph contains. Mr. Pratten analyzed the coal, but I have been unable to find the analysis in the notes returned to my office.) In quality it very nearly resembles the Madison county coal.

VERMILION COUNTY.

PAYNE'S MINE.

Thickness of the bed, six feet six inches. Overlaid with clay and drift. Underlaid with one foot four inches of clay. Below this there is another bed of coal one foot six inches thick, underlaid with four feet of fire-clay. Coal dull; brittle; fracture hackly; layers thick, and separated with a small amount of carbonaceous clod. Contains numerous thick vertical plates of carbonate of lime; also, thin seams of sulphuret of iron, disposed both horizontally and vertically. The following analysis is of coal taken from the main entry, sixty feet from the outcrop.

Specific gravity, 1.26

Loss in coking, 46.1

Total weight of coke, 53.9 =100.0

Analysis : Moisture,					-	8.7			
Volatile matters,		•		•		87.4			
Carbon in coke,			-		•	48.9			
Ashes (gray),		-		•		10.0			
Carbon in the coal	Carbon in the coal, 50 38								

PAYNE'S COAL - (OUT CROP.)

Specific gravity, 1.2833
Loss in coking, 47.0
Total weight of coke, 53.0 = 100.0

Analysis:—Moisture,	•		•	•		-		-	5-1
Volatile matters, -							-		41.9
Carbon in coke, -	•		•	•		-			47.5
Ashes (gray),		-			•		-		5.2
									100 0
Carbon in the coal, 5	5.5								

HENSON'S MINE.

Thickness of the bed, seven feet. Overlaid with a soft fossiliferous sandstone. Underlaid with fire clay. Coal bright and dull, in the alternate layers; layers thick, and separated with carbonaceous clod; hard; fracture hackly. Contains vertical seams of carbonate of lime, very numerous and irregularly distributed.

Specific gravity, 1.3	11
Loss in coking,	48.5
Total weight of coke,	56.5 = 100.0

Analysis:Moisture,	-		-		-	9.0
Volatile matters,		•		-		34·5
Carbon in coke,	-				-	50-0
Ashes, -		-		-		6.5
Carbon in the coa	l, 58·	8				100.0

LAFFERTY'S MINE.

Thickness of bed, six feet. Overlaid with blue calcareous clay shale. Underlaid with fire clay. Coal bright on a fresh fracture, but weathers with a dull surface; fracture hackly; hard and compact; layers separated with carbonized coal plants. Contains a few vertical plates of carbonate of lime.

Specific gravity, 1.28			
Loss in coking,	44.8		
Total weight of coke,	55.7	=	100.0

Analysis:—Moisture,	-		-		_		8.2
Volatile matters		-		-		- '	85.8
Carbon in coke,	-		•		-		48-7
Ashes (gray),		-					7.0
Carbon in the cost	K1	٠,					100-0

CAROTHERS' MINE.

Thickness of the bed, six feet six inches. Overlaid with a hard, dark-colored fossiliferous clay shale, and underlaid with one foot three inches of blue clay. Below this there is one foot four inches of coal, which is underlaid with fire-clay. Coal rather hard and compact; lustre bright; fracture somewhat conchoidal; layers thin, but do not separate easily, with carbonized coal plants between them. Contains thick vertical plates of carbonate of lime; and, also, an abundance of bright yellow sulphuret of iron, disposed both horizontally and vertically.

Specific gravity, 1-218

Carbon in the coal, 51.1

Specific gravity, 1.213

GILBERT'S MINE.

Thickness of the bed, six feet six inches. Overlaid with clay shale; underlaid with fire-clay. Coal rather dull; brittle; fracture tolerably even; layers alternately thick and thin. Contains thick vertical seams of carbonate of lime, with occasional lumps of sulphuret of iron in them; also, a great number of thin seams of the last named mineral, causing a reticulated appearance on one of the horizontal faces of the coal.

Loss in coking, 51.4

Total weight of coke, 48.6 = 100.0

Analysis:—Moisture, - 8.0

Volatile matters, - 48.4

Carbon in coke, - 45.6

Ashes, - 3.0

Carbon in the coal, — 100.0

BUTLER'S MINE.

Thickness of the bed, one foot two inches. Overlaid with one foot ten inches of black slate, which is capped with limestone, (one foot of slav

shale intervening). Underlaid with six feet of fire clay. Coal rather dull; hard; brittle; fracture hackly; layers thin, with partings of carbonaceous clod. Contains a few thin vertical streaks of carbonate of lime. Cleavage cubical. Coke good. The bed is too thin to be mined profitably.

Specific gravity, 1.3943
Loss in coking, 40.1
Total weight of coke, 59.9 == 100.0

Analysis:Moisture,	-		-		-		6.0	•
Volatile matters,		-		-		-	34· 1	
Carbon in coke, .	•		-		•		47.9	
Ashes (white),		-		•		-	12.0	
Carbon in the coal	. 55	·7	•					100.0

LEONARD'S MINE.

Thickness of the bed, six feet. Overlaid with three feet of very compact calcareous shale. Underlaid with five feet of fire clay. Coal bright; rather hard; the horizontal arrangement of the layers hardly perceptible; intersected in all directions by thin vertical stams of carbonate of lime and streaks of sulphuret of iron; breaks in any direction rather than horizontally. Contains thick irregular seams of sulphuret of iron, and also of carbonized coal plants.

Specific gravity, 1.3127
Loss in coking, 45.57
Total weight of coke, 54.43 == 100.00

•	•						
Analysis :—Moisture,	-		•		-		6.40
Volatile matters,		•		•		•	39.17
Carbon in coke,	٠		•		•		48.93
Ashes (white),		-		-		-	5.20
a	`	_					100·00
Carbon in the coal	53	.()					

WILLIAMS' MINE.

Thickness of the bed, six feet six inches. Overlaid with a heavy bed of hard clay shale. Underlaid with fire clay. Two parcels of coal were examined from this mine. Of the first, coal bright; hard; compact; fracture tolerably even; layers quite thin, but not easily separated, with a

little carbonaceous clod between them. Contains thin vertical seams of both carbonate of lime and sulphuret of iron. Cleavage rhomboidal. This coal has a brilliant horizontal fracture. Of the second, coal bright; hard; fracture somewhat conchoidal; layers thick, and not easily separated, with a small amount of carbonaceous clod between them. Contains thick vertical plates of carbonate of lime, and also many thin ones of iridescent sulphuret of iron.

Specific gravity, 1·2247
Loss in coking, 49·15
Total weight of coke, 50·85 == 100·00

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Analysis:—Moisture,	-		•		•		2.80	
Volatile matters,				1		-	46.35	
Carbon in coke,	-		-		-		45.85	
Ashes, -		-		•		• .	5.00	
Carbon in the coal,	50.	58						100.00

ALEXANDER'S MINE.

Thicknes of the coal, between six and seven feet. Overlaid with yellow clay and gravel. Underlaid with fire-clay. Coal hard; dull; compact; fracture even; layers alternately thick and thin. Contains carbonate of lime and sulphuret of iron in thin vertical seams.

Specific gravity, 1.2686
Loss in coking, 43.5
Total weight of coke, 56.5 = 100.00

Analysis : Moisture,	-		٠			8:4
Volatile matters,		-	•		•	40.1
Carbon in coke,	٠.			-		40.5
Ashes, -		-	-,		-	16.0
Carbon in the coa	l, 50°	98				100.0

RUSSELL'S MINE.

Thickness of the coal, six feet six inches. Overlaid with clay shale; underlaid with fire clay. Coal dull to bright; moderately hard; layers alternately thick and thin, and separated with carbonaceous clod. Contains many thin plates of carbonate of lime, and a few seams of sulphuret of iron, both disposed vertically. Spatters in coking.

Specific gravity, 1.2148
Loss in coking, 49.0
Total weight of coke, 51.0 == 100.0

Analysis:—Moisture,	-				-		5.6
Volatile matters,		-		-		•	48.4
Carbon in coke,	-		-		-		89.0
Ashes (gray),		•		-		-	12.0
Carbon in the coal.	52.0)					100.0

"CHICAGO AND DANVILLE COAL COMPANY."

This is the same as "Payne's mine," of which two analyses have already been given—one from the outcrop, and one from coal taken from the mines at a point sixty feet within the main entry. The following analysis is of coal taken from the mine 400 feet from the outcrop. Thickness of the bed between six and seven feet. Coal bright; hard; compact; fracture uneven; layers thin and separated with carbonaceous clod. Contains vertical seams of carbonate of lime, and both vertical and horizontal streaks of sulphuret of iron.

Specific gravity, 1 2377
Loss in coking, 49 04
Total weight of coke, 50 96 = 100 00

Analys	is :—Moisture,	-		-		-		8.60	
	Volatile matters,				-		-	40.44	
	Carbon in coke,	-				•		48.96	•
	Ashes (gray),		-		-		•	2.00	
	Carbon in the coal	. 4 9.	.8]	100.00

INNIS COOK'S MINE.

Thickness of the bed, three feet six inches. Overlaid with twelve feet of dark clay shale. Underlaid with clay. Coal dull; hard; fracture uneven; layers thick, and separated with carbonaceous clod. Contains thick vertical plates of carbonate of lime, and horizontal ones of sulphuret of iron. Coke good.

Specific gravity, 1 3376
Loss in coking, 47 3
Total weight of coke, 52 7 = 100 0

Analysis: Moisture,			-		-		9.8	
Volatile matters,		•		•		•	87.2	
Carbon in coke,			-		•		47.7	
Ashes (reddish gray)),	•		-		•	5.0	
Carbon in the coal.	51.4	4					10	0.0

ELI THORNTON'S MINE.

The thickness of this bed varies from three to four feet. Overlaid with clay shale. Underlaid with fire clay. Coal rather slaty; not very hard; lustre dull; fracture uneven. Contains vertical plates of carbonate of lime, and horizontal layers of sulphuret of iron. The coal agglutinates in coking.

	Specific gravity, 1	4027	•		•			•
	Loss in coking,	4	12:27					
	Total weight of col	ke, 5	7.73	= 10	0.00			·
Analysis:-	-Moisture,	•		•		-		15.00
-	Volatile matters,		-		•		-	27 ·27
	Carbon in coke,	-		•		-		55-78
	Ashes (red), -		•		•		. .	2.00
	Carbon in the coke	e , 56	•52					10000

T. H. BLACKMORE'S MINE.

Thickness of the bed, four feet. Overlaid with clay shale. Underlaid with fire-clay. Coal bright and dull in the alternate layers; brittle; fracture uneven; layers alternately thick and thin, with thin separations of carbonaceous clod. Contains carbonate of lime and sulphuret of iron in thin vertical plates.

Specifie gravity, 1:	290	1			•			
Loss in coking,	4	14 ·5						
Total weight of cok	e, l	55.5 =	= 10	0.0				
Analysis:—Moisture,	-		-		-		6.5	
Volatile matters,		•		•		•	88.0	
Carbon in coke,	-		-		-		47.1	
Ashes (redish gray	7),			•		-	8.4	
Carbon in the coal,	53	6	•					100.0

MACDONOUGH COUNTY.

COLCHESTER MINE.

Thickness of the bed, two feet. Overlaid with shale. Underlaid with shale and sandstone. Coal hard; compact; bright; layers tolerably even and wavy. A first rate coal.

Specific gravity, 1 290
Loss in coking, 41 2
Total weight of coke, 58 8 = 100 0

Analysis :Moisture,	-		•				5.4	
Volatile matters,		-				-	35.8	
Carbon in coke,	•		•		• `		56.8	
Ashes (light gray),		•		-		•	2.0	
Carbon in the coal	80·	10						100.0

TAZEWELL COUNTY.

NEARLY OPPOSITE PEORIA.

Thickness of the bed from three feet six inches to four feet. Overlaid with shale. Underlaid with clay. Coal rather bright; hard; compact; fracture even; layers thick and separated with carbonaceous clod. Contains a very few thick seams of carbonate of lime, and a little sulphuret of iron disposed horizontally.

Specific gravity, 1.263
Loss in coking, 43.4
Total weight of coke, 56.6 = 100.0

Analysis : N	loisture, •	•		-		•		5.4	
v	olatile matters,		-		•		-	38.0	
C	arbon in coke,	-		-		-	•	48:6	
A	shes (gray),		-		•		-	8.0	
. 0	arbon in the coa	1. 52	0						100.0

MENARD COUNTY.

SALEM HILL MINE.

Thickness of the bed, two feet. Coal bright; brittle; separated with thin layers of carbonaceous clod; fracture somewhat conchoidal. Contains a few thin vertical plates of carbonate of lime.

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	Specific gravity, 1. Loss in coking, Total weight of co	4	46·0 54·0 =	= 10	0.0	1		
Analysis :-	-Moisture, .						9.5	
	Volatile matters,				-		 36.5	
	Carbon in coke,			-		-	51.2	
	Ashes (dark red),				•	,	 2.8	100.0
	Carbon in the coal,	55.	55				-	100.0

PEORIA COUNTY.

KICKAPOO MINES. (MOFFATT'S.)

Thickness of the bed, four feet to four feet six inches. Overlaid with shale. Underlaid with clay. Coal moderately bright; hard; compact; fracture uneven; layers tolerably thick, and separated with carbonaceous clod. Contains many thick seams of sulphuret of iron and of carbonate of lime. Coke very poor.

Specific gravity, 1·282
Loss in coking, 47.7Total weight of coke, 52.3 = 100.0

Analysis: Moisture,	-2					11.5	
Volatile matters,		-		k-		36.2	
Carbon in coke,						46.3	
· Ashes (gray),					-	6.0	
						-	100.0
Carbon in the coal	. 53	.2			1.5		

No special examination has been made of the Kingston mines by any one connected with the State Survey. The specific gravity of the coal is 1.216. The thickness of the bed is from four feet to four feet ten inches, No analysis of that coal has been made in the State Laboratory. Before the next report is made, the beds at Kingston, as well as two other beds in Peoria county will be examined, and the analyses of the coals furnished to the proper department.

KNOX COUNTY.

MCMURTRY'S MINE.

Thickness of the bed, five feet. "Alluvial covering where it is worked. True roof not ascertained." Coal very brittle; bright on a fresh fracture.

but soon becoming dull when exposed to the weather, especially on its vertical face. Contains thick vertical seams of carbonate of lime, with sulphuret of iron disposed both horizontally and vertically.

"RIGHT INCH PART OF THE SEAM."

Coal tolerably hard; fracture uneven; splits easily into thin layers, in consequence of very minute seams of carbonized coal plants being interposed between them; lustre rather dull. Contains carbonate of lime in vertical plates, and sulphuret of iron in horizontal layers.

" MIDDLE PART OF THE BED."

Coal of a bright metallic lustre, somewhat resembling graphite; horizontal arrangement very irregular; presents nowhere a regular surface or face; brittle; layers rather thick. Hardly any foreign matters visible, except a few thin seams of carbonate of lime.

Specific gravity, 1.216
Loss in coking, 50.5
Total weight of coke, 49.5 = 100.0

Analysis: Moisture,			-				11.0	
Volatile gases,		•		-		•	89.2	
Carbon in coke,			-		-		45.5	
Ashes (nearly black)	,	-		-		-	4.0	
Carbon in the coal.	55.5							100.0

LOOMIS' MINE. (WATAGA.)

Thickness of the bed, from four feet to four feet six inches. This coal is overlaid with from three to eight inches of cannel coal, separated with an inch of pyritous shale. Roof of the mine, black slate; floor, fire-clay.

BITUMINOUS COAL.

Coal hard; bright; fracture hackly; layers thin, and separated with carbonized coal plants. Contains thin vertical plates of carbonate of lime, and a small amount of sulphuret of iron in the horizontal partings.

Specific gravity, 1.286
Loss in coking, 44.4
Total weight of coke, 55.6 = 100.0



Analy	sis :- Moisture,				4		11.0	
	Volatile matters,					-	33.4	
	Carbon in coke,			0.0			51.1	
	Ashes (pink),						4.5	2022
	Carbon in the coa	1, 54	1					100.0

LOOMIS' CANNEL COAL.

Coal dull; hard; compact; fracture tolerably even. Contains a few thick vertical plates of carbonate of lime. Coke good.

Specific gravity, 1·33
Loss in coking, 42·4
Total weight of coke, 57·6 = 100·0

Analysis:—Moisture, - - 6·5
Volatile matters, - - 35·9
Carbon in coke, - - 33·6

Carbon in coke, - - 33.6
Ashes (gray), - - 24.0

Carbon in the coal, 42.6

WARREN COUNTY.

SMITH'S MINE.

Thickness of the bed, three feet. Overlaid with two feet six inches of black slate. Underlaid with one foot of black slate, resting on sandstone. Coal rather bright; hard; fracture tolerably even; layers thin, slightly undulating, and separated with many carbonized coal plants. Contains vertical and horizontal seams of sulphuret of iron. Near the outcrop the sulphuret has been converted into oxide of iron. Coke good.

Specific gravity, 1.24Loss in coking, 43.1Total weight of coke, 56.9 = 100.0

Analysis: Moisture,			6.1
Volatile matters,			- 37.0
Carbon in coke,	(-)	-	51.7
Ashes (red), -	-		- 5.2
			100.0
Carbon in the coal	. 54.55		

TUCKER'S MINE.

Thickness of the bed, two feet two inches. Overlaid with five feet six inches of shale, which is capped with three feet of black slate. Underlaid with clay. Coal dull, with a few bright layers; hard; fracture hackly; layers thick and separated with carbonaceous clod. Contains a few thick vertical seams of carbonate of lime. Also, vertical and horizontal seams of sulphuret of iron.

Specific gravity, 1·227
Loss in coking, 44·8
Total weight of coke, 55·2 = 100·0

Analysis:—Moisture,	-		-		-		8.0	
Volatile matters,		-		•		. •	36.8	
Carbon in coke,	-		•		-		51.0	
Ashes (red),		•		-		-	4.2	
i.							10	0.0
Carbon in the coal	, 57	.0						

BUREAU COUNTY.

SHEFFIELD COMPANY'S MINE.

This bed varies from four to five feet in thickness. Underlaid with indurated clay containing nodules of limestone. Overlaid with a few inches of black slate, which is capped with indurated clay. Coal bright; hard; compact; fracture inclining to conchoidal; layers thin and separated with very minute seams of carbonaceous clod. Contains a few thin vertical seams of carbonate of lime. Slacks on exposure to the weather.

Carbon in the coal, 53.4

TISKILWA MINES.

" Coal Valley."

This bed is of the same age as the middle workable seam of La Salle county; and like that bed is frequently interrupted with clay "slips."

The portion of the bed examined is on L. D. Whiting's place. Coal very bright; hard; compact; layers generally thick, and separated with carbonaceous clod, sometimes nearly indistinct; fracture conchoidal. Contains a very few thin seams of carbonate of lime, with occasional thin scales of sulphuret of iron. Swells but little in coking.

Specific gravity, 1.363Loss in coking, 43.0Total weight of coke, 57.0 = 100.0

Analysis: - Moisture,					7.5	
Volatile matter	8,			-	35.5	
Carbon in coke,					48.9	
Ashes (white),		-			8.1	. 0
Carbon in the c	oal, 57	0			-	100.0

ROCK ISLAND COUNTY.

CUTLER, EDWARDS & COMPANY'S "CANNEL COAL."

Thickness of the bed, six feet six inches, with six inches of black slate in the seam. Overlaid with indurated clay and drift. Underlaid with fire clay. This is rather a highly bituminous shale than a coal. It burns with a free, bright flame, and is so highly inflammable that, at the outcrop, which is covered with grass, it has, at some previous period, become ignited from the annual prairie burnings, the effects of which are to be seen for a distance of more than a rod from the opening. Shale dull; grayish; hard and tough; splits into thin lamine, in consequence of thin layers of coal plants intervening. In the tracing of this bed it is highly probable that it may be found to graduate into a bed of bituminous coal. This shale is suitable for the manufacture of all the oils and solid matters at present derived from real cannel coal. For other purposes it is, in my opinion, entirely useless.

Specific gravity, 1·441
Loss in coking, 31·3
Total weight of coke, 68·7 = 100·0

Analysi	s:-Moisture,		-				4.5	
-	Volatile matters,						26.8	
	Carbon in coke,		-		-		46.7	
	Ashes (light red),			12		-	22.0	
	Carbon in the shale	- 40						100.0

CARBON CLIFF MINE. (LOWRY, THOMAS & CO.)

Thickness of the bed, three feet eight inches, to five feet three inches. Overlaid with black shale, which is capped with sandstone. Underlaid with fire clay. Troubled occasionally with "horse-backs." Coal bright; hard; compact; fracture uneven; layers rather thick, with a little carbonaceous clod between them. Contains irregular vertical seams of carbonate of lime, and a few vertical streaks of sulphuret of iron. Coke good.

Specific gravity, 1.247
Loss in coking, 43.7
Total weight of coke, 56.8 == 100.0

	•	•							
Analysis:-	Moisture,	- .		•		-		7.0	
	Volatile matters,		-		٠.		•	36.7	
,	Carbon in coke,	-		-		- .		52.8	
•	Ashes (white), -		-		•		٠.	8.5	
									100.0
	Carbon in the coal,	55.3	}						

CORCORAN'S MINE.

At John H. Ely's opening, the bed of coal is from three feet six inches to four feet in thickness. Overlaid with black slate. Underlaid with fireclay. Coal bright; brittle; fracture uneven; layers thick, with partings of carbonaceous clod. Contains vertical seams of sulphuret of iron, with a little carbonate of lime in the same seams.

Specific gravity, 1.2656
Loss in coking, 47.2
Total weight of coke, 52.8 = 100.0

Analysis	:Moisture,			-				8.0	
•	Volatile matters,		-		•,		-	39.2	
	Carbon in coke,			-		- • .		50.3	
	Ashes (black),		-		-		-	2.5	
	Carbon in the coa	1. 57	•7				•		100.0

HENRY COUNTY.

ROBBINS, LAWSON & COMPANY'S MINE.

Bituminous Coal.

Thickness of the bed, four feet. Overlaid with black slate. Underlaid with fire-clay. Of two specimens examined, the coal of the *first* is brittle;

dull; layers tolerably thick; fracture very uneven. Contains vertical plates of carbonate of lime, accompanied with a small quantity of sulphuret of iron. Of the *second*, the coal is bright; hard; compact; layers thick, and separated with carbonized coal plants. Contains thick plates of carbonate of lime, some of which are vertical, and others inclined at an angle of about 50°. This is the same as Serrell's bed. Coke good.

Specific gravity, 1.224
Loss in coking, 49.7
Total weight of coke, 50.3 = 100.0

Analysis :- Moisture,	-			-		12.5	
Volatile matters,		-			-	37.2	
Carbon in coke,						47.1	
Ashes (blackish gray	7),		14.		-	3.2	20.0
Carbon in the coal. 5	33.0						00.0

ALDRICH'S MINE.

Thickness of the bed, from three feet six inches, to four feet eight inches. Overlaid with a few inches of shale, which is capped with a hard, blue, shelly limestone. Underlaid with fire-clay. Coal bright; hard; fracture even; layers thin, with much carbonaceous clod between them. Contains vertical seams of carbonate of lime.

Specific gravity, 1.261Loss in coking, 43.1Total weight of coke, 56.9 = 100.0

Total weight of co.	ac,	00 0 -	- 10	00				-
Analysis: Moisture,	-		-		-		6.0	
Volatile matters,		- '					37.1	
Carbon in coke,					-		49.9	
Ashes (brown),						-	7.0	
				-3				100.0
Carbon in the coal	. 54	-1					-	

SERRELL'S MINE. (KEWANEE.)

Thickness of the bituminous portion of the bed, four feet. Overlaid with cannel coal. Underlaid with fire-clay. Coal bright and dull in alternating layers; hard; compact; fracture tolerably even. Contains thick seams of carbonate of lime, which cross each other at nearly right angles, causing the coal to break into slightly irregular cubes. Has sulphuret of iron disposed both horizontically and vertically. The layers of coal are thick, and separated with carbonaceous clod. Coke very bright and good, but swells in coking.

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Specific gravity, 1-282
Loss in coking, 42.2
Total weight of coke, 57.8 = 100.0

Analysis: Moisture,	•		-		-		9.0	
Volatile matters,		-		-		-	33.2	
Carbon in coke,	-		-		-		52· 8	
Ashes (gray),		•		-		٠.	5.0	
~	_				,			100.0
Carbon in the o	nai	KQ • 9						

SERRELL'S CANNEL COAL.

Thickness of the bed, from eight inches to one foot. Overlaid with black slate. Underlaid with four feet of bituminous coal. No analysis of this coal has yet been made; but, judging from its texture and general appearance, it does not differ much from the Wataga cannel coal. The coal is dull; hard; compact; fracture slightly conchoidal; layers thick. Contains bright yellow vertical plates of sulphuret of iron.

ALLEN'S MINE. (GENESEO.)

Thickness of the bed at the outcrop, one foot six inches. Underlaid with fire-clay. The roof could not be ascertained. Coal bright; iridescent on its horizontal faces; hard; fracture even. Contains a few thin vertical seams of carbonate of lime. Cleavage rhombohedral.

Specific gravity, 1.321Loss in coking, 41.24Total weight of coke, 58.76 = 100.00

Analysis:—Moisture,	-		-				6.50
Volatile matters,		-		-		-	34.74
Carbon in coke,	•		-		•		52.76
Ashes (brown),		•		-		-	6.00
		_					100.00
Carbon in the coal	55	•3					

MERCER COUNTY.

THORNTON & PARK'S MINE.

Thickness of the bed, four feet. Overlaid with "blue limestone." Floor not ascertained. Coal tolerably hard; bright; brittle; fracture nearly

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even; layers thin, and separated with carbonized coal plants. Contains vertical plates of both carbonate of lime and sulphuret of iron.

Specific gravity, 1 244

Loss in coking, 45 8

Total weight of coke, 54 2 = 100.0

Analysis:—Moisture, - 7.7

Volatile matters, - 38.1

Carbon in coke, - 49.7

Ashes (white), - 4.5

Carbon in the coal, 53.2

LA SALLE COUNTY.

OTTAWA BED.

Mr. N. Perley "strips" this bed of coal on Cushman's place, one mile above Ottawa. It is the same as the "lower bed" worked east of La Salle; and is, really, the lowest bed in the State of Illinois, or in any of the Western States in the same latitude. Overlaid with clay. Underlaid with clay resting on the older sandstone (Lower Silurian). Coal bright; brittle; fracture hackly; layers thick, and separated with carbonaceous clod; intersected with numerous vertical seams of carbonate of lime, with thin streaks of sulphuret of iron running in all directions. Coke good, but agglutinates in coking.

WARD'S MINE. (MARSEILLES.)

Thickness of the bed, from three feet six inches, to four feet. This seam is very unequal in quality. A portion of the bed will rank with the best coals in the State, while other benches will be among the lowest.

Coal dull; friable; fracture uneven; layers thick, with much cardonaceous clod between them. Contains thick vertical plates of carbonate of lime, as well as thick horizontal seams of sulphuret of iron.

Specific gravity, 1·3144

Loss in coking, 45·6

Total weight of coke, 54·4 == 100

Analysis :—Moisture,			-		. .		5.0
Volatile matters,		•		•		-	40.6
Carbon in coke,	-		-		-		88· 4
Ashes (white),		•		٠.		-	21.0
Carbon in the coal.	47	0					100·0

I. B. HITT'S VERMILION MINE.

Thickness of the bed, three feet six inches. Overlaid with shales. Underlaid with clay resting on shaly sandstone. Coal dull; rather hard; compact; layers thick, and separated with carbonaceous clod. Contains a great many thin seams of carbonate of lime, with sulphuret of iron very sparingly disseminated.

Specific gravity, 1.2989

Loss in coking, 46.9

Total weight of coke, 53.1 = 100.0

Analysis: Moisture,	-		-		-		4.5
Volatile matters,		•		•		-	42:4
Carbon in coke,			-		-		40.8
Ashes (white),		-		• ,		-	12.8
Carbon in the soul	47.						100.0

KIRKPATRICK'S MINE.

Thickness of the bed, eight feet. Coal bright; compact; hard; layers rather thin; fracture nearly even; a small quantity of carbonaceous clod between the layers. Contains a few vertical plates of carbonate of lime, and some sulphuret of iron.

Specific gravity, 1.202
Loss in coking, 48.2
Total weight of coke, 51.8 = 100.0

Analysis :- Moisture,						7.0	
Volatile m	atters,				-	41.2	
Carbon in	coke, -			10		49.3	
Ashes (gra	y),					2.5	
Carbon in	the coal, 5	4.6				_	100.0

IRELAND'S MINE.

Thickness of the bed, from two feet eight inches, to three feet six inches. Overlaid with twelve feet of blue shale. Underlaid with clay resting on the lower sandstone. This was the first coal mined in La Salle county. Coal dull on the face; bright and iridescent in the horizontal layers, which are thin; fracture irregular. Contains thin vertical seams of carbonate of lime running in every direction, with a few very thin seams of sulphuret of iron.

Specific gravity,	1.237				-		
Loss in coking,		6-7					
Total weight of co	ke, t	3.3 =	= 10	0.0			
Analysis: Moisture,	-					6.8	
Volatile matters,		-		-	-	39.9	
Carbon in coke,	-					50.3	
Ashes (gray),					-	3.0	
Carbon in the cos	al, 55	1					100.0

SEELY'S MINE. (NEAR LOWELL.)

Average thickness of the bed, three feet six inches. It is undulating. Coal rather dull; hard; compact; fracture even; layers thin, and slightly waving. Contains thin vertical seams of carbonate of lime, and some of sulphuret of iron, with thick horizontal deposits of the last named mineral. The coke is good.

	Specific gravity, 1	223	4						
	Loss in coking,		42.6						
	Total weight of col	ke,	57.4	= 10	0.0				
Analysis :-	-Moisture,	-		-		-		8:0	
	Volatile matters,				-		-	34.6	
	Carbon in coke,	-						41.4	
	Ashes (brick red),				-			16.0	
	Carbon in the coal	53	.0					-	100.0

KIRKPARICK'S CANNEL COAL.

(Lower Bed.)

Thickness of the bed, from six to nine inches. This coal is exposed in the bed of the "Big Vermilion of the Illinois river," for the distance of two miles. Overlaid with five feet of sandy shale. Underlaid with argillaceous sandy shale. Coal dull; hard; compact; fracture even, inclining to conchoidal; layers rather thin for a cannel coal. This is the best cannel coal I have met with in Illinois. The bed is too thin to work profitably. It is the only cannel coal we have, that approaches, in external appearance, to the celebrated "Breckinridge coal" of Kentucky. In hand specimens no one could tell the difference. Coke good.

Specific gravity, 1.434
Loss in coking, 39.6
Total weight of coke, 60.4 = 100.0

Analysis: Moisture,			-		-		3.0
Volatile matters,		-		-		•	36.6
Carbon in coke,	-		•		-		30.4
Ashes (gray),		-		-		-	30.0
					÷ .		100.0

In order that the difference between this coal and the Kentucky cannel coal may be seen at a glance, I subjoin an analysis of the "Breckenridge coal," made in the State Laboratory.

Specific gravity, 1:1766
Loss in coking, 64:6
Total weight of coke, 35:4 = 100:0

Analysis: Moisture,	•		. •		-		1.7	
Volatile matters	,	-		· •		-	62.9	
Carbon in coke,	•		-		•		27.9	
Ashes (gray),		-		•		•	7.5	• • • •
Carbon in the co	al, 35	0						100.0

As the use of cannel coal is attracting much attention at present, I give, below, an analysis of the Virginia cannel coal from the Kanawha, made, also, in the Illinois State Laboratory. Coke good.

Specific gravity, 1·2592 Loss in coking, 45·78 Total weight of coke, 54·22 = 100·00

Analysis :-	-Moisture,				-	-70	
	Volatile matters,			. :		45.08	
- (Carbon in coke,	-				47.92	
	Ashes (white),		-			6.30	
							100.00
	Carbon in the coa	1. 59	.09				

EAGLE CREEK MINE,

Thickness of the bed, five feet. This is one of the best coals for black-smith purposes that I have met with in the State. All the coal taken from the bed at that locality, so far as I know, has been quarried from the bed of the creek. Coal hard; brittle; lustre from dull to bright; fracture hackly; layers rather thick, and separated with carbonized coal plants, among which is disseminated a few patches of sulphuret of iron. Contains a few short vertical plates of carbonate of lime, none of them exceeding an inch in length.

Specific gravity, 1·2265
Loss in coking 46·7
Total weight of coke, 53·3 = 100·0

Analysis:	-Moisture,			-		7.5	
	Volatile matters,					39.2	
	Carbon in coke,					45.8	
	Ashes (dark red),					7.5	
							100.0
	Carbon in the coal	. 5'	7.7				

"BUFFALO ROCK" MINE.

This bed of coal is worked by the three brothers Mitchell. It is "stripped," not mined. The coal rests directly on the lower sandstone. The bed varies in thickness from one foot six inches, to two feet ten inches. Overlaid with indurated clay. Underlaid with sandstone, with a very thin clay parting.

Specific gravity, 1 289
Loss in coking, 45 0
Total weight of coke, 55 0 = 100 0

Analysis: Moisture,	-		•		••		6.2	
Volatile matters,		•		-		•	38.8	
Carbon in coke,	•		•		•		50:5	
Ashes (pale red),		•				-	4.2	
Carbon in the coal	KA.	· Q						1000

BIG VERMILION. (REYNOLDS' MINE.)*

Thickness of the bed, four feet. This is the same bed as the one worked at "Hitt's Vermilion mine;" and the external characters of the coal about the same. Swells much in coking.

Specific gravity, 1.242

Loss in coking, 51.4Total weight of coke, 48.6 = 100.0

Analysis :Moisture,			-		-		12.0
Volatile matters,		-		-		-	39·4
Carbon in coke,	-		-		-		47.1
Ashes, -		-		-		•	1.5
Carbon in the coa	l. 54	-8					1000

EGLESTON'S CANNEL COAL.

Thickness of the bed, from one foot to one foot three inches. Overlies the middle workable seam of La Salle county. Below the cannel coal, and separated with a very thin seam of shale and sulphuret of iron, is from five feet to five feet six inches of bituminous coal. Coal dull; hard; compact; fracture conchoidal; no lines of deposit visible. Contains a few vertical plates of sulphuret of iron. The coke is excellent; its shape is not at all altered in coking.

Specific gravity, 1.41 Loss in coking, 44.5 Total weight of coke, 55.5 = 100.0

^{*}Norn.-This is one of the best coals in La Salle county, so far as the lower bed is concerned.

Analysis:	-Moisture,						6.0	A
	Volatile m	atters,					38.5	
	Carbon in	coke,			-		41.5	
	Ashes,						14.0	
	Carbon in	the coa	d, 44	.4			-	100.0

FIELD & ROUNDS' MINE.

Thickness of the bed, from two feet three inches, to three feet eight inches. This is the lowest La Salle county bed. Coal very bright; hard; rather brittle; fracture even; layers thin, and separated with carbonaceous clod. Contains a few thin vertical streaks of carbonate of lime, and some minute specks of sulphuret of iron disposed horizontally. Cleavage rhomboidal.

	opecine gravity, i	44	4					
	Loss in coking,		48.1					
	Total weight of co	ke,	51.9 =	= 10	0.0			
Analysis :-	-Moisture,			,			6.7	
	Volatile matters,						41.4	
	Carbon in coke,	-					46.7	
	Ashes (red), -					-1	5.2	
	Carbon in the coal	59	.4					100.0

Specific gravity, 1.222

KIRKPATRICK'S CANNEL COAL.

(Upper Bed.)

Thickness of the bed, from one foot six inches, to three feet four inches, Coal slaty; dull; hard; fracture rather even; layers thin, and separated with a little earthy matter stained with oxide of iron. Coke good; resembles Egleston's.

	Specific gravity, 1	266						
	Loss in coking,	4	15.2					
	Total weight of col	ke, 5	4.8 =	= 10	0.0			
Analysis :-	-Moisture,				. • 0		6.0	
	Volatile matters,				-1		39.2	
3	Carbon in coke,			1.4		-	40.1	
	Ashes (blackish gr.	ay),			-		14.7	
	Carbon in the coal,	48.	0				_	100.0

EGLESTON'S MINE.

Thickness of the bed, two feet three inches. This is the lower La Salle county bed, and is worked near the outcrop, in the bluffs of "Little Vermilion" river. Coal rather dull; hard; compact; fracture even; layers thick. Contains thin vertical seams of carbonate of lime. Cleavage cubical.

Specific gravity, 1.21
Loss in coking. 48.25
Total weight of coke, 41.75 = 100.00

Analysis:-Moisture,	-		-		-		5.50	
Volatile matters,		•					42.75	
Carbon in coke,	-		-	•	•		48.45	
Ashes (gray),		-		-	~	-	3*30	
Carbon in the coal	. 52	63						100.00

HARTSHORNE'S MINE.

Thickness of the bed, two feet seven inches. Overlaid with sixteen feet of indurated clay. Underlaid with five feet of fire-clay, which separates it from the lower sandstone. Coal bright and dull in the alternating layers; hard; somewhat brittle; fracture nearly even; layers thin, with partings of carbonaceous clod. Contains a few thin vertical seams of sulphuret of iron. Coke good.

Specific gravity, 1.2748

Loss in coking, 42.5

Total weight of coke, 57.5 = 100.0

Analysis	:Moisture,	•		-				4.9
	Volatile matters,		•		-		•	87.6
	Carbon in coke,	-		•		-		49.7
	Ashes (brown),		-		-		•	7.8
	Carbon in the coa	l, 54	16					100·0

"LA SALLE COAL MINING COMPANY'S" MINE.

Thickness of the bed, four feet six inches. Overlaid with black slate. Underlaid with six feet of fire-clay. The following analysis was made of coal taken from the outcrop, in "Swanson ravine." This bed is the upper one, considered workable, in La Salle county.

Specific gravity, $1^{\circ}26$ Loss in coking, $52 \cdot 51$ Total weight of coke, $47 \cdot 49 = 100 \cdot 00$

Analysis :- Moisture,		-	10.00	*
Volatile matters,			42.51	
Carbon in coke,			40.49	
Ashes (brown),	-		7.00	
Carbon in the coal.	47.44		10	00.00

The analysis given below is from the coal in the shaft sunk by that company. It is under cover, and is about equal to the specimens of "upper bed" coal in the shaft near the railroad bridge at La Salle, and the shaft at Peru. Coal very bright; rather hard; brittle; layers thin, and separated with very thin seams of carbonaceous clod. Contains vertical plates of carbonate of lime, with a few specks of sulphuret of iron. Coke good.

Specific gravity, 1.2515Loss in coking, 42.93Total weight of coke, 57.07 = 100.00

					-		
Analysis:	-Moisture,					6.50	
	Volatile matters,		-			36.43	
	Carbon in coke,					50.07	
	Ashes (purplish),					7.00	
					*		100.00
	Carbon in the coal	. 54	.39			4	

HENRY D. GORBET'S MINE.

This is the same bed as the one worked at Ottawa, and as the lower bed worked at La Salle. Thickness of the bed, from one foot three inches to two feet four inches. It is worked by "stripping." Overlaid with hard blue shales. Underlaid with indurated clay, full of vegetable impressions. Coal dull; hard; compact; layers thick; fracture nearly even. Contains a few thin seams of carbonate of lime, with thin vertical partings of sulphuret of iron.

Specific gravity, 1·2517
Loss in coking, 45·18
Total weight of coke, 54·82 = 100·00

Analysis :- Moisture,				5.60
Volatile matters,				39.58
Carbon in coke,				47.12
Ashes (red), -				7.70
				100.00
Carbon in the coal	, 55.55			

PERU.

The following analysis has nothing to do with the workable coal beds underlaying that city. My attention was called to the coal noticed below by Dixwell Lathrop, Esq., the originator of all coal-mining operations in La Salle county. It is only noticeable on account of its occurring in thin lenticular sheets in the upper shales, and on account of its extraordinary crystalline form. Coal dull; soft; brittle; layers none; structure columnar, with thin partings of lime between the columns. This is the most curious disposition of carbonaceous matter I have ever met with. It is of no economical value.

Specific gravity, 1.539
Loss in coking, 28.68
Total weight of coke, 71.32 = 100.00

Analysis: Moisture,					6.00
Volatile matters,					22.68
Carbon in coke,					40.32
Ashes (brown),					31.00
Carbon in the coa	1. 45	-06			100.0

GRUNDY COUNTY.

WATSON'S MINE.

Thickness of the bed five feet, only four feet of which is worked, one foot of coal being left for a roof. Underlaid with clay. Coal bright; hard; compact; fracture conchoidal; layers thin, with impressions of coal plants between them. One bench of this bed makes good coke. Contains a few thin horizontal seams of sulphuret of iron.

Specific gravity, 1.259
Loss in coking, 45.5
Total weight of coke, 54.5 = 100.0

Analysis :- Moisture,			-		9.0	
Volatile matters,					36.5	
Carbon in coke, 4	7.8			1.	47.8	
Ashes (pink),		-			6.7	
Carbon in the coa	1, 51.3					100.0

GEORGE TURNER'S MINE.

Thickness of the bed, two feet five inches. Overlaid with clay. Underlaid with fire-clay. Worked by "stripping" from seven to fifteen feet of clay and soil. Coal dull to bright; hard; compact; fracture even, breaking into rhombohedrons; layers alternately thick and thin, and separated with a little carbonaceous clod. Contains vertical plates of carbonate of lime, and a few specks of sulphuret of iron. Coke good.

	Specific gravity, 1	22	7					
	Loss in coking,		48.5					
	Total weight of co	ke,	51.5 =	= 10	0.0			
Analysis :-	-Moisture,	-					7.0	
	Volatile matters,						41.5	
	Carbon in coke,						49.0	
	Ashes (white),				-		2.5	
	Carbon in the coal	, 54	1				-	100

COAL EIGHT MILES FROM WILMINGTON.

In the prairie between Wilmington, Will county, and "Goose Lake," Grundy county, there are various outcrops of coal. At every opening the coal is quarried, or "stripped." It is all of one quality. Coal tolerably bright; rather hard; fracture even; layers indistinct, and separated with carbonaceous clod. Contains vertical seams of carbonate of lime, with bright sulphuret of iron disposed both vertically and horizontally.

	Specific gravity, I	.216	00				
	Loss in coking,		47.95				
	Total weight of co	oke,	52.05	= 1	00.00		
Analysis :-	-Moisture,	-		-		10	4.00
	Volatile matters,				-	-	43.95
	Carbon in coke,						49.15
	Ashes, -						2.90
-	Carbon in the coal	I, 50	-00				100.00

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TELFIR'S MINE.

This is the same bed as the one worked by Turner at the outcrop near the railroad, and by G. W. Oliver near the canal. Overlaid with indurated shale. Underlaid with fire-clay. Thickness of the bed from two feet six inches to two feet eight inches. The brothers Telfir work the bed by a shaft fifty-eight feet six inches deep. Coal somewhat hard; rather dull; fracture very uneven; layers thin, with carbonized coal plants between them. Contains vertical seams of carbonate of lime, and an abundance of sulphuret of iron. Coke good.

Specific gravity, t Loss in coking Total weight of c			44·5	; ; == 1	00.0			
Analysis:Moisture,	٠.		-		•		8.0	
Volatile matters,		-		•		•	36.2	
Carbon in coke,	-		-		•		53.5	
Ashes (purplish),		•		•		•	2.0	
Carbon in the co	al, 57	-77						100.0

ROBERT DAVIDSON'S MINE.

Thickness of the bed, two feet six inches. Overlaid with fourteen feet of indurated clay. The bed is is worked by "stripping." Coal bright; hard; compact; fracture even; layers thick, with thin seams of carbonaceous clod between them. Contains vertical seams of carbonate of lime.

Specific gravity, 1	2408	3					
Loss in coking,		49-25					
Total weight of co	ke,	50.75	 1	00.0			
Analysis:—Moisture,	•		-				12.00
Volatile matters,		-	·	-		-	37.25
Carbon in coke,	-		•		•		48 75
Ashes (pink),		-		•		•	2.00
Carbon in the coal						_	100.00

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COUNTY.		Specific Gravity.	Moisture.	Volatile Gases.	Carbon in Coke.	Ash.	Carbon in Coal.	Color of Ash.
Gallatin	:		2.6	868	56.1	1.5	58.85	
do	:	1.2892	6.5	30.3	55.2	8.0	60.7	
do	*	1.2925	8.0	85.8	55.5	3.7	63.1	
do		1.3000	8.6	30.7	87.2	3.0	66.3	
do		1.2364	1.0	86.0	57.3	8.9	67.01	Gray.
do		1.808	5.0	87.8	53.2	7.0		White.
do		1.2953	1.2	84.6	52.2	12.0	58.5	
do		1.3054	5.7	32.0	8.69	2.5	62.5	
do		1.2758	2.8	38.58	51.92	6.7	62.5	Drab.
Saline	e	1.2873	5.3	34.5	9.09	9.6	29.0	
do		1.4955	4.1	28.3	57.6	10.0	57.6	Dark Red.
Williamson	eon	1,3197	8,8	86.08	51.92	8.7	56.27	Reddish Brown.
do		1.2825	6.2	36.9	54.9	2.0	57.5	
Johnson	u	1.4446	1.6	23.46	47.84	27.1	61.2	White.
Jackson	nc	1.2933	6.5	31.2	8.09	1.5	67.0	
Hamilton	uo	1.3233	5.3	33.64	53.56	7.5	54.85	Pale Brown.
Perry		1.285	8.5	40.4	48.1	8.0	59.6	Gray.
Monroe	a	1.246	6.7	36.2	52.6	4.5	58.7	White.
do		1.2825	0.6	32.0	52.3	8.9	50.5	
St. Clair	air	1.304	6.0	33.8	55.2	2.0	55.3	Pale Red.
do		1.293	8.5	35.8	51.2	4.5	57.5	Red.
do		1.268	5.5	39.5	49.6	5.4	54.6	Gray.
do		1.2966	8.1	35.56	47.74	8.6	54.5	Gray.
do		1.3847	4.5	88.18	49.02	8.6	54.39	White.
do		1.2843	5.1	40.44	47.66	6.8	20.09	White.
do		1.3531	4.0	35.63	86.77	23.6	49.38	Gray.
do		1.315	6.0	39.4	45.7	8.9	52.63	White.
Madison	on	1.2859	11.0	37.75	47.35	8.0	51.48	Gray.
do		1.8187	8.3	36.09	45.01	10.6	50.38	Gray.
do		1.3221	7.5	80.05	54.85	7.6	56.27	Brown.
do		1.2587	5.8	41.46	47.44	5.3	54.62	Gray.
do		1.8191	10.3	32.3	53.9	3.5	54.39	Reddish Brown.
op		1.3158	10.0	40.0	42.7	7.3	49.08	Pink.
do		1.2916	11.0	44.3	37.2	7.5	45.45	Gray.
do		1 2017	8.0	48.15	38.85	10.0	47.1	Gray.
-		1.00.1						

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	Color of Ash.	Brown.	Gray.	White.	Gray.	Grav.	•	Dark Gray.	Dark Brown.	Deep Red.	White.	Red.	Light Brown.	Red.	Yellow.	Pale Red.	Grav.	Gray.		Gray.	Grayish White.		Gray.	White.			Gray.	Bluish Gray.	Reddish Gray	Red.	Reddish Gray.	Light Gray.	Gray.	Very Dark Re
The Coals marked with an asterisk * are good Coking Coals.	Carbon in Coal.	53.06	63.8	53.2	67.5	59.79	50.11	45.7	49.8	67.8	61.79	52.43	64.8	61.83	48.0	55.91	55.5	50.38	58.8	51.7	51.1		55.7	53.0	20.58	80.09	52.0	49.8	51.44	56.52	53.6	60.1	52.0	55.55
good Co	Ash.	5.2	7.8	6.0	29.0	10.6	9.0	8.8	5.7	6.5	12.3	7.5	2.0	7.1	10.4	6.0	5.5	10.0	6.5	7.0	8.0	8.0	12.0	9.9	0.9	16.0	12.0	2.0	2.0	2.0	8.4	5.0	8.0	2.8
erisk * are	Carbon in Coke.	49.1	48.72	45.5	56.9	48.93	42.86	42.8	43.63	52.9	46.1	50.13	52.2	46.53	41.2	51.48	47.5	43.9	20.0	48.7	46.2	45.6	47.9	48.93	45.85	40.5	89.0	.48.96	47.7	55.78	47.10	26.8	48.6	51.2
ith an aste	Volatile Gases.	40.9	36.98	44.5	12.1	34.47	42.64	41.9	89.18	34.6	87.1	30.27	37.3	87.87	88.4	33.32	41.9	37.4	34.5	35.8	42.3	43.4	34.1	39.17	46.35	40.1	43.4	40.44	37.5	27.27	38.0	35.8	38.0	36.5
marked w	Moisture.	4.8	6.5	2.0	2.0	6.0	5.6	12.0	11.5	0.9	4.5	12.1	5.5	8.0	10.0	9.5	5.1	8.7	9.0	8.0	8.5	8.0	0.9	6.4	2.8	8.4	9.9	8.6	8.6	15.0	6.5	5.4	4.4	9.2
The Coals	Specific Gravity.	1.2631	1.2797	1.2203	1.7784	1.8083	1.2468	1.2839	1.26	1.286	1.803	1.288	1.2396	1.2883	1.3354	1.2684	1.2833	1.26	1.811	1.28	1.218	1.218	1.3943	1.3127	1.2247	1.2636	1.2148	1.2377	1.3376	1.4027	1.2901	1.290	1.263	1.26
COAL. FOR	COUNTY.	Calhoun	Macoupin	Pike	do	Green	Sangamon	do	do	Schuyler	op	Scott	op	do	Adams	op	Vermilion	do	do	do	do	do	do	qo	op	do	do	op	do	op	qo	McDonough	Tazewell	Menard
MIDDLE ILLINOIS	MINE.	Johnson's.	Near Carlinville	Houseworth's, near Pittsfield.	Jackson's, eight miles north of Pittsfield	Drake's*	Sanders', three miles north of Springfield	Springhekd.	Puffenberger's	Fleadant View*	Kushville	Exeter	Barker's.	Lirost's.	Higby's	Bassett's	Fayne's, in entry	do. in outcrop	Henson's.	Lafferty's, six feet bed	Carother's	Gilbert's	Butler's	Leonard's	Williams.	Alexander's	Kunsell's	Chicago & Danville Coal Co.	COOK'8	Ell Thornton's	T. H. Blackmore's	Colonester	Upposite Feoria	Salem Hilli

M 1.7 W.	COUNTY.	Spec. Gravity.	Moisture.	Volatile Gases	Carbus in Coke.	Aeb.	Carbon in Coal.	Color of Ash.
Kickapoo	Peoria	1.282	11.6	36.2	46.8	6.0	53.9	Grav
McMurtry's	Knox	1.216	11.0	39.5	45.5	4	55.5	Nearly Rinch
Loomis', Wataga	do	1.286	11.0	83.4	51.1	4.5	54.1	Pink
is', Cannel Coal *	do	1:33	6.5	86.9	83.6	24.0	49.6	Grav
* 9.	Warren	1.24	6.1	87.0	51.7	2.5	54.55	Red
l'ucker's *	do	1.227	8.0	86.8	51.0	4.2	57.0	Red
Sheffield	Bureau	1.1986	7.0	40.5	47.5	0.0	53.4	White
l'iskilwa*	do	1.868	7.5	35.5	48.9	,	57.0	White
Rock Island, Shale,	Rock Island	1.441	4.4	26.8	46.7	22.0	6.84	Light Red
Carbon Cliff *	qo	1.247	7.0	36.7	52.8	8.5	25.3	White.
Corcoran's	do	1.2656	8.0	89.2	50.3	2.2	57.7	Black.
Kobbins, *	Henry	1.224	12.5	87.3	47.1	83	58.0	Blackish Grav.
Aldrich's	op	1.261	0.9	87.1	49.9	7.0	54.1	Brown.
Kewanee"	op	1.282	0.6	83.2	52.8	6.0	58.2	Grav.
Geneseo.		1.321	9.9	84.74	52.76	6.0	55.8	Brown.
Thornton & Park's.	Mercer	1.244	7.7	38.1	49.7	4.5	53.2	White.
Perley's, Ottawa*	La Lalle	1.2672	7.8	86.9	52.8	4.0	54.6	White.
B, Marseilles.	do	1.3144	5.0	40.6	33.4	21.0	47.0	White.
Hitt's Vermilion Mine.	do	1.2989.	4.5	42.4	40.8	12.8	47.6	White.
Kirkpatrick's, Big Vermilion	do	1.202	7.0	41.2	49.8	2.2	54.6	Gray.
8.1	op	1.287	6.8	89.6	20.3	3.0	55.1	Grav.
Seeley's, Lowell	qo	1.2284	8.0	34.6	41.4	16.0	• 58.0	Bright brick Red
strick's Cannel Coal *	p	1.434	8.0	86.6	80.4	80.0		Gray.
Bagle Creek	do	1.2265	7.6	83.8	46.8	7.5	7.73	Dark Red.
Bunalo Kock.	op	1.289	6.2	88.8	20.2	4.5	64.8	Pale Red.
Dig Verminon	op	1.242	12.0	39.4	47.1	1.6	54.8	
on's Cannel Coal "	op	1.41	6.0	38.2	41.6	14.0	44.4	,
that frounds	op	1.222	6.7	41.4	46.7	62.		Red.
MIREPARTICE'S Cannel Coal	op	1.266	6.0	39,2	40.1	14.7		Blackish Grey.
rigieston 8.	op	1.21	5.6	42.75	48.45	∞		Gray.
Hartshorne's **		1.2748	4.9	87.6	49.7	7.8		Brown.
Kentucky Coal Mining Co., upper bed	op	1.2515	10.0	42.51	40.49	7.0		Brown.
diopotop.	op	1.2517	5.6	39.58	47.12	7.7		Red.
oky Shaft, La Salle*	op	1.26	6.5	36.43	20.02	7.0		Purplish.
	ор	1.589	6.0	22.68	40.32	81.0		Brown,
8,0	Grundy	1.259	0.6	36.5	47.8	6.7		Pink.
Turner 8, Morrist	op	1.227	7.0	41.5	49.0	50	54.1	White.
Light miles southwest of Wilmington	9	23166	40	70 0X	- A- O-	•		

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ANALYSES OF AMERICAN COALS,

SOME OF WHICH ARE USED IN THE WEST.

STATE.	LOCALITY.	NAME OF BED.	Specific Gravity.	Volatile Matter.	Carbon.	Ashes.
Pennsylvania	Venango County	Sandy Ridge		43.20	49.80	7.00
do.				52.78	29.54	17.68
do.	Beaver County	1 V		36.00	30.12	33.88
	Crawford Connty			38.75	59.45	1.80
do.	Mercer County		1.275	40.50	57.80	1.70
do.	Orangeville			43.75	53.45	2.80
do.	Blossburg	Coal Run	1.371	16.40	75.40	8.20
do.	Blossburg	Bloss' Coal		32.80	62.80	5.20
Ohio.	Portland County	Upson's	1.264	44.298	53.404	2.288
do.	Jackson County		1.283	47.327	49.882	2.221
do.	Jackson County		1.560	44.800	39.950	14.620
do.	Pomeroy			18.70	76.70	4.60
do.	Briar Hill		1.320	38.13	58.41	3.46
Indiana.	Parke County	Foundry	1.219	21.00	75.00	4.00
do.	Vermilion County	4	1.270	39.00	52.00	9.00
do.	Vigo County		1.240	27.50	.70.00	2.50
do.	Sullivan County	Lick Fork	1.240	28.00	70.00	2.00
do.	Terre Haute		1.240		50.80	ļ
Iowa.	Duck Creek		1.270	44.00	48.50	7.50
Missouri.	Calloway County	Mammoth Vein	1.250	34.20	50.78	15.02
do.	Cote-sans-dessein	Mastodon Vein	1.252	34.06	50.81	15.13

ANALYSES OF FOREIGN COALS,

USED IN THE MANUFACTURE OF IRON.

COUNTRY.	LOCALITY.	NAME OF BED.	Volatile in Coking.	Carbon.	Ashes.	Color of
England.	Forest of Dean	Cinderford	36.00	62.0	2.0	Red.
do.	Parkend			58.5	2.5	Ochre.
do.	Coleford			63.72	4.25	Red.
do.	Starkey		36.72	61.53	1.75	Red.
do.	S. Staffordshire	New Mine Top	45.100	52.775	2.125	Pink.
do.	S. Staffordshire	Fire Clay	46.35	51.40	2.25	Buff.
do.	Bentley	Ten Yard	34.18	63.57	2.25	White.
do.	Lane End	Bassey Mine	38.70	58.30	3.00	Pink.
do.	(N. Staffordshire)				1	
do.	Lane End (best fur-					1
do.	nace), N. Stafford-		32.30	65.20	2.50	White.
do.	shire		1			
do.	Golden Hill	Spendcroft	39.58	58.67	1.75	1
do.	Golden Hill	Little Row Bed	34.53	62.47	3.00	Gray.
do.	Shrophshire	Randle Coal		64.19	3.00	White.
do.	Shrophshire	Double Coal	41.38	57.87	0.75	Fawn.
North Wales	1 Dumbala	Three Yard	35.70	62.70	1.6	Light.
North Wates	S Brymbo	Brassey Vein	34.100	64.582	1.318	Gray.
England.	Churchway		35.67	60.33	4.0	Brown.
do.	Churchway	L. Charles	34.740	64.135	1.125	Fawn.
do.	S. Staffordshire	Corbyn's Hall (Tow				1
do.	1	Coal)	40.6	51.9	7.5	Gray.
do.	S. Staffordshire	Do. do. (Heath-				
do.		ing Coal)	43.33	54.17	2.50	Buff.
do.		Do. (Bottom Vein)	32.00	62.870	5.125	Pink.
do.	do Bentley	(Five ft. Splint Coal)		49.42	4.75	Red.
do.	N. Staffordshire	Ten Feet Coal	39.11	58.89	2.0	Grav.
do.	Golden Hill		37.70	60.80	1.75	Gray.
do.	No. of the second second	Dio	itized by	JUDI	516	1

SECTIONS.

The following tabular view of sections of Rocks in various parts of the State, is designed, more especially, to show their relative position with regard to the coal beds. They are details of the illustrations prepared for and intended to elucidate the Geological Report. As no appropriation has yet been made for engraving or lithographing maps or sections, it has been deemed best to furnish such information, in the present form, as may probably aid those interested in the economical matters now being published.

A	LEX	ANT	DED	CO	TIN	TV
А	LIFLA	AIN.	$D \mathbf{r}_{\mathbf{n}} \mathbf{n}$	· UU	UIN	II.

SEC. 2, T. 14 S., R. 11 W. White quartzose limestone, Buff colored shale,	30 10 40 30 25 45 100	5½ MILES NORTH OF THEBES, NORTH SIDE OF SEXTON'S CREEK. Cherty beds, Red shelly limestone, Limestone, GRAND CHAIN. Drift clay Sandstone, 'Shale, Massive grey limestone,	150 10 30 190 30 35 10 70
			145

PULASKI COUNTY.

BIG CHAIN, 3 MILES ABOVE CAL- EDONIA.		IN.			
Hidden,				,	
Yellow clay,	20				
Sandstone,	3				
White clay,	20				1
Slaty sandstone	4			71	
shale, with fossils,	30				
Hidden,	10				- 1
	87			- 1	

POPE COUNTY.

Sandstone,Limestone,Hidden,Slaty limestones and marlites,	90	IN.	Archimedes limestone, Hidden,	6	
---	----	-----	-------------------------------	---	--

HARDIN COUNTY.

BLUFF AT ROSICLARE.	FEET	IN.	1
Sandstone,	35		0.00
Limestone,		- 11	
Sandstone,		- 11	
Limestone,	60		
	201	- 11	

GALLATIN COUNTY.

4 MILES WEST OF SHAWNEETOWN. Mountain limestone and millstone		IN.	NEW HAVEN. Limestone, Black slate, with nodules of	FEET 4	IN
grit,Slope,	. 48	9	black limestone,	1	
Sandstone,	21	8	Gray clay shale,	2	6
Rocks covered,	87	3	Alternation of sandy and clay shales,	12	l .
Covered,			Billing,		_
Black limestone,	6				
Covered,	?				
	201	8			
3½ miles n. e. of shawneetown. Dip 7° N. 15° W.					
Conglomerate,		3			
Limestone,	9				
Slope,	23				
Sandstone,	30	4	(1	
Clay shale,	35				
Black slate,	1	6			
Iron with fossils (Grayville bed) Coal,		31		1	
Fire clay,		6			
Clay shale,	10	10	1 1		
Covered,	15				

SALINE COUNTY.

MEEK'S FARM.	FEET	IN.	SOUTH PART OF SALINE COUNTY.	FEET	IN.
Millstone grit			Section showing the denuda-	1	
Hard Quartzite,	45	9	tion the mountian limestone		
Altered shale cont'g coal plants	19	3	and the millstone grit have		
Hard quartzite	8		undergone, prior to the de-		
Coarse sandstone,	13	- 11	position of the coal measures.		
Shale,	13		Hard quartzite,	8	
Thin-bedded sandstone,	10	6	Coarse sandstone,	13	
Covered,	28		Shale,	13	
Shaly limestone with Archim-			Thin-bedded sandstone,	10	6
edes,	6		Covered,	28	-
Light blue limestone,	4	4	Limestone with Archimedes,	10	10
Brown marl,	1	4	Brown marl,	1	4
Yellow veined limestone,	1	6	Limestone,	1	6
Covered,	15		Covered,	15	
Sandstone,	10		Sandstone,	10	
	174	8		111	2

WILLIAMSON COUNTY.

11 2 100000		COUNTI.		
### RAB ORCHARD CREEK, BETWEEN FEET MARION AND MURPHYSBORO. 27 Black slate and coal, 2 25 Black slate and coal, 11 andstone, 15 Black slate, 12 67 WH	6	SALINE CREEK, ON MARION AND GOLCONDA ROAD. Drift, Sandstone, Shale, Sandstone,	60 16 10 15	IN
Orift clay,				
JACE	SON (COUNTY.		
DEVIL'S BAKE-OVEN. FRET 64		HOLMAN & SMITH'S COAL BANK, MURPHYSBORO'. Hidden, Shale, Coal, Shale, Coal,	50 10 3 1 2	8
	W T TAT	COUNTY.	_	-
SEC. 5, T. 6, S. R., 2 E. Sandstone,		† MILE SOUTH OF BENTON. Shaly sandstone,	FEET, 3 1	8
DANI	OT DII	COUNTY.	-	-
3 MILES BELOW PRAIRIE DU FEET ROCHER. Hidden, Sandstone, 80 Limestone, 10		I MILE BELOW CHESTER. Hidden, Limestone, Sandstone, Limestone, PRAIRIE DU ROCHER. Hidden, Limestone, S. W. ‡ SEC. 2, T. 8, S. R. 6 W. Massive sandstone,	110 35 22 35 202 120 90 210	11
249		Hidden,	27 54 52	

ST. CLAIR COUNTY.

BELSHA'S COAL BANK.	FEET	IN.	BIG CANTEEN CREEK.	FEET	1
imestone,		- 1	Soil,	4	
farly slate,	1	-	Alluvial clay,	9	
oal slate,		9	Arenaceous marly slate,	3	(
oal,	6	9	Sandstone,	12	
ire clay,			Slaty ferruginous clay,	- 1	(
ray marl,			Arenaceous shaly limestone,	3	
	-		Gray hard limestone,	5	
	18	6	Fire-clay,	15	
FISCHER'S QUARRY.	10	0	Pile-ciay,	10	
A STATE OF THE STA	×			-	
oil,		0		54	
lluvial clay,		6	QUARRY NEAR CASETVILLE.		
haly limestone,		9	Soil,	3	
renaceous limestone,		6	Alluvial clay,	3	
lue limestone with seams of	f		Argillaceous sandstone,	9	
ferruginous clay,	8	6	Silicious sandstone,	2	
	-		Argillaceous sandstone,	9	Ι.
	38	3		_	_
HARRISON'S QUARRY.	"		W 1	18	
	6		CHURCHILL'S COAL BANK.	10	
oil,	32	6		9	
Illuvial Clay,	1		Soil,	1	
ellow clay,		8	Limestone,	3	
larly clay,		9	Soapy Clay,		
lue limestone,	. 4		Coal,	6	
	-	-	Fire-Clay,	?	
	45	11		-	-
HAZEL CREEK QUARRY.				9	
licaceous sandstone,	. 1	8	ANDERSON'S SHAFT.		
erruginous shale,		10	Soil and alluvial clay,	38	
eam of iron ore,		11	Yellow clay,	15	
licaceous sandstone,		-2		6	
			White limestone,	2	
ray sandstone,	4		Marly slate,		
		-	Blue limestone,	5	1
	11	8	Dark calcareous rock,	7	
_			Coal,	7	
oil,	. ?		Fire-clay,	9	1
Illuvial clay,	8				-
laty fire clay,		9		80	1
imestone,	4		4	-	١
erruginous marly slate,		3	Soil,	3	1
oal slate,		7	Alluvial elay,	3	1
oal,		. 1	Limestone,		1
oai,			Fine alox	6	1
	0	7	Fire-clay,	0	1
· · · · · · · · · · · · · · · · · · ·	8	1	1	0-	1
WILSON'S SHAFT.	1		2215 2162 2212 2212	25	1
oil and alluvial clay,	. 30		COAL BANK OF ILLINOIS COAL CO.		1
ariegated clay,			Soil,	15	1
renaceous clay,		. 1	Gray limestone,	3	1
haly limestone,	. 6		Coal slate,	1	1
lue limestone,	6		Coal,	6	1
Iard blue rock,			Fire-clay,	2	1
oal,					L
Fire clay,		6		25	1
leav limestone	9	0	-	20	1
ray limestone,					1
					1
	111	6			1

ST. CLAIR COUNTY (Continued).

Slaty marly limestone,	Arenaceous limestone, Limestone, Marly slate, Limestone, PFEIFFER'S PLACE. Soil and clay, Limestone, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Clay slate, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	FEET 7 4 4 4 2 2 177 6 6 1 1 8 9 7 16 6 3 7 7 6 6 3 10 10 10 10 10 10 10 10 10 10 10 10 10	4
Alluvial clay, 1 8 Slaty marly limestone, 1 Limestone, 5 1 Blue marly slate, 7 Coal slate, 6 Fire-clay, 9 17 11 Soil, 9 Limestone, 4 6 Coal Slate, 5 Coal, 5 Soil, 1 6 Gray limestone, 1 6 Gray limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Limestone, Marly slate, Limestone, PFEIFFER'S PLACE. Soil and clay, Limestone, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	4 4 4 4 2 - 17 17 6 1 18 8 9 - 32 2 2 0 8 8 7 7 16 6 3 7 7 - 68	10 6
Alluvial clay, 1 8 Slaty marly limestone, 1 Limestone, 5 1 Blue marly slate, 5 Coal slate, 7 Coal, 6 Fire-clay, 9 17 11 Soil, 9 Limestone, 4 6 Coal Slate, 5 Coal, 5 Soil, 6 Fire-clay, 9 11 Soil, 9 Limestone, 4 6 Coal Slate, 5 Soil, 6 Fire-clay, 9 11 Soil, 9 Limestone, 1 6 Coal, 6 Fire-clay, 9 7 6 Soil, 1 6 Gray limestone, 2 6 Marly slate with limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal slate, 5 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Limestone, Marly slate, Limestone, PFEIFFER'S PLACE. Soil and clay, Limestone, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	4 4 4 4 2 - 17 17 6 1 18 8 9 - 32 2 2 0 8 8 7 7 16 6 3 7 7 - 68	10 6
Saity marly limestone,	Marly slate, Limestone, FFEIFFER'S PLACE. Soil and clay, Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	17 17 6 1 18 9 	10 6
Limestone, 5 1 Blue marly slate, 6 Coal slate, 7 Coal, 6 Fire-clay, 9 Limestone, 4 6 Coal Slate, 5 Coal, 5 9 11 Soil, 9 Coal Slate, 5 Soil, 9 Coal, 6 Fire-clay, 9 Coal Slate, 1 6 Gray limestone, 2 6 Marly slate with limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Eimestone, FFEIFFER'S PLACE. Soil and clay, Limestone, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	2 17 17 6 1 8 9 	10 6
Soil	PFEIFFER'S PLACE. Soil and clay, Limestone, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate, Marly slate,	17 17 6 1 8 9 32 20 8 7 16 3 7 68	10
Coal slate, 6 7 Coal, 9 6 Fire-clay, 9 11 Soil, 9 4 6 Coal Slate, 5 5 Coal, 5 9 11 Soil, 9 11 Soil, 6 7 Coal Slate, 7 6 Soil, 7 6 Soil, 7 7 6 Soil, 8 7 6 Soil, 9 1 6 6 Gray limestone, 9 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal slate, 5 Coal, 4	Soil and clay, Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate, Marly slate,	17 6 1 8 ? 32 20 8 7 16 1 6 3 7	6
Coal slate, 6 7	Soil and clay, Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate, Marly slate,	17 6 1 8 ? 32 20 8 7 16 1 6 3 7	6
Coal, 6 6 7 17 11 Soil, 9 4 6 6 6 6 6 6 6 7 11 11	Soil and clay, Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate, Marly slate,	6 1 8 9 20 8 7 16 1 6 3 7 68	
Soil,	Soil and clay, Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate, Marly slate,	6 1 8 9 20 8 7 16 1 6 3 7 68	
Soil,	Limestone, Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	6 1 8 9 20 8 7 16 1 6 3 7 68	
Soil,	Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	1 8 9 32 20 8 7 16 1 6 3 7	6
Soil,	Coal slate, Coal, Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	8 ? 32 20 8 7 16 1 6 3 7	6
Soil,	Coal. Fire-clay, BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	9 -32 20 8 7 16 1 6 3 7	6
Limestone,	BELLEVILLE. Drift clay. Limestone, Marly clay. Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	9 -32 20 8 7 16 1 6 3 7	6
Limestone,	BELLEVILLE. Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	32 20 8 7 16 1 6 3 7	6
Coal Slate,	Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	20 8 7 16 1 6 3 7	6
Soil,	Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	20 8 7 16 1 6 3 7	6
Soil	Drift clay, Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	8 7 16 1 6 3 7 68	
Soil,	Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	8 7 16 1 6 3 7 68	
Soil,	Limestone, Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	8 7 16 1 6 3 7 68	
Soil,	Marly clay, Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	7 16 1 6 3 7 	
Coal Slate, 1 6 Coal, 6 Fire-clay, 7 6 Soil, 1 6 Gray limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	16 1 6 3 7 	
Coal Slate, 1 6 Coal, 6 Fire-clay, 7 6 Soil, 1 6 Gray limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Sandstone, Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	1 6 3 7 	1
Coal Slate, 1 6 Coal, 6 Fire-clay, 7 6 Soil, 1 6 Gray limestone, 2 6 Gray limestone, 1 8 Limstone with marly slate, 1 6 Gray limestone, 1 3 Coal, 4 A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	Limestone, Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	68	1
Coal	Clay slate, Limestone, Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	68	1
Coal. 6 7 6	Limestone,. Coal, BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	3 7 	-
7 6	BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	68	*
7 6	BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	68	1
1 6 2 6 6 6 6 6 6 6 6 6	BECHHOLZ'S COAL BANK. Soil and alluvial clay, Marly slate,	100	-
1 6 2 6 6 6 6 6 6 6 6 6	Soil and alluvial clay,	100	
Gray limestone,	Soil and alluvial clay,	100	1
Gray limestone,	Soil and alluvial clay,	10	
Gray limestone,	Marly slate,		1
Marly slate with limestone,	marry state,	10	
1 8 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 7		5	11.
Limstone with marly slate,	Blue limestone,	2	3
Limstone with marly slate,	Fire-clay,	1000	6
Gray limestone,	Coal		-6
Coal slate,	Coal,	5	0
Coal,	Fire-clay,	?	
A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE		-	-
A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	The state of the same of the same	24	3
A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE	ROCK CREEK, SEC. 9, T. 9, S. R. 4 E.	1000	100
A WELL 208 FEET N. E. OF THE NORTH ENTRY NEAR CASEYVILLE		10	
NORTH ENTRY NEAR CASEYVILLE	Shale,		
	Black slate and coal,	1	1
Duitt alaw	Fire-clay,	2	1
Drift clay, 26 8	The second second second	-	-
Limestone, 1 6	The second second second	13	1
Blue marly clay,	WILSON'S COAL BANK.	-	
Blue marly clay, 1 10	Call	0	1
	Soil,	?	100
30	Alluvial clay,	42	1
1 MILE S. OF BOLL'S PLACE.	Marly slate,	1	
		7	
	Marly slate,		KI
Shaly sandstone, 2	Black slate,	2	1
Marly slate, 10	Blue limestone,	6	10
Coal slate, 1 10	Coal slate,	1	6
Coal	Coal	6	-
	Coal,	9	
Fire-clay, 6	Fire-clay,	100	1
	The same of the sa	-	
23 4		64	6
TAX TO SEE THE PROPERTY OF THE	DILG & KEMPFF'S SHAFT.	1	1
MILE S. E. OF BOLLES PLACE.		00	1
Soil, 1 1	Soil and alluvial clay,	29	1117
Clay, sand and gravel, 2 2	Limestone,	15	1
Sandstone, 6 2		3	Y
	Coal slate	7	1
	Coal slate,		
9 5	Coal slate,	?	
	Coal slate,	-	
	Coal slate,		1

MADISON COUNTY.

SHOAL CREEK. Clay shale and impure iron stone, Limestone, Clay shale and iron stone, Sandy shale,	15	3	Silver creek, East of Marine. Feet Limestone,	8 8
	93	3	9	8

CALHOUN COUNTY.

CAP AU GRES.	FEET	IN.	HAMBURG.	FEET	12
Hidden,	50	- 11	Loess and drift,	.80	
Fine-grained sandstone,	70	- 11	Crinoidal limestone,	60	
Hidden,	10	- 11	Hidden,	125	
Sandstone,	4	- 11	Oolitic limestone,	6	
Hidden,	4 54	- 11	. Compact bluish limestone,	10	
Sandstone,	26	11	Shelly limestone,	6	1
amenda in the second of the second	_	- 11	Compact gray limestone,	4	
	214	- 11			
1 MILE BELOW GILEAD.		- 11	-	291	
Sandstone,	2	- 11	MISSISSIPPI BLUFF, NORTH LINE		
Gray limestone,	12	- 11	OF THE COUNTY.		
Magnesian limestone,	10	. H	Blue clay,	14	
Blue clay, mostly hidden,	9		Arenaceous bed,	3	
one only moony management		- 11	Hidden,	12	
	24		maden,		
HART'S PLACE, N. E. 1 SEC. 20,		- 11		29	
T. 8, S. R., 3 W.		- 11	N. E. 1 SEC. 35, T. 12, S. R. 2 W.		`
Fine grained, compact, fossil-		- 11	Dip 24° S. 20° E.		
iferous limestone,	20		Hidden,	60	
Slate,	8	11	Crinoidal limestone,	25	
Dark slate,	11	- 11	Hidden,	30	
Gray shale,	14	. 1	muden,	90	
dray share,	1.4	- 11	£ .	115	
N N	53	. [110	
1 MILE ABOVE CAP AU GRES.	00	- 11			
Hidden,	54				
Gray limestone with fossils,	24	- 11			
Slaty limestone	6	.			
Slaty limestone,	65	- 11			
Fine grained sandstone, Fawn colored sandstone,	6				
	-		(×		
Ash colored sandstone,	12			l	
	167	11			

CUMBERLAND COUNTY.

EMBARRAS RIVER.	FEET	IN.		FEET	IN.
Sandstone and soil,	. 33		Bro't forward,	52	10
Coarse sandstone,	2	8	Hard sandstone,		10
Sandy shale,	2		Nodular sandy shale,	3	1
Greenish clay shale and thin lay-		1	Thin sandy shale	6	4
ers of black coaly matter,	13		Coarse sandstone	2	
Ferruginous limestone		8	Sandy shale,	4	
Clay with iron stone,	1	6	Covered,	13	
	52	10		82	_

VERMILION COUNTY.

PARIS'S MILL. Yellow Sandstone,	FEET 15	IN.	COOK'S MINE.	FEET	
Micaceous sandy shale,	2	l i	Soil and drift,	20	
	3	1 1	Sandy shale,	18	
Yellow sandstone,		1 1	Dark clay shale,	12	
andy shale,	2		Coal.	. 8	
•	22		Hidden,	5	
dr. fithian's quarry.	22	!		58	Γ
soil and drift,	11		JOSIAH SANDUSKY'S.		1
andstone,	15	l i	Sandy Shale with thin seams of		١
ilicious clay shale,	10		sandstone,	65	l
lay shale,	4	1 1	Sandy shale,	11	1
oal (Seam No. 6),	ī	9	Silicious clay shale with nodu-		ı
our (Beam No. 0),		ات	lar iron ore.	16	١
	41		Clay shale with nodular iron		
Teornton's Mill.	-		ore,	11	
oil and drift,	44		Fossil bed,		ĺ
lay shale,	16	1	Coal,	6	
oal,	8	6	Fire-clay,	2	
liue fire-clay,	7		Coal,	1	t
ndurated shale,	i	8			-
andy shale,	5	-		118	ĺ
andstone,	11		ALEXANDER'S COAL MINE.		1
			Soil and drift clay,	9	ŀ
	87	9	Fossiliferous clay shale,	1	ı
TODALI BODE DE OB DIRVITE	0,	•	Fossil bed,		
ORTH FORK, W. OF DANVILLE.	9		Coal (No. seam 4),	6	
oil and drift clay,			Fire-clay,	1	١
Sluish gray limestone,	2	1	Coal (seam No. 3),	î	
lay shale,	4	l i	Fire-clay,	5	
Coal (Seam No. 2),	2	1 1	Silicious clay,	8	
ire-clay,	5		Limestone,	2	
Sandy shale,	23	1 1	Clay shale,	4	ı
		-	Coal (coam No. 9)	1	ĺ
•	86		Coal (seam No. 2),		İ
i. w. frac. 🔒 sec. 1, t. 18, r. 11.		1	Fire-clay,	6	ı
Soil and drift clay,	84		Sandy shale and shaly sandstone	25	1
Dark calcareous slate,	3	1 1		70	-
Black bituminous slate,	3		SEC. 26, T. 19, R. 18,	· 70	ı
Clay shale,	1	8	Soft sandstone,		
alcareous sandstone,	1	8		12	
Blue sandy shale,	2	1	Sandy shale,	12	١.
andstone,	7	1 1	1	94	-
Iidden,	11		HANGING ROCK.	24	ı
,			Soil and drift clay,	9	
	69	11	Heavy bedded sandstone,	-	ı
CHICAGO & DANVILLE COAL. CO.	V.		Derk clay shale with nodular	82	
lay shale,	48		Dark clay shale with nodular		
Dark clay shale,	3		iron ore,	12	ļ
	7		Black slate,	3	1
oal,	i	3	Black bituminous shale,	_	ı
oal and clay,		5	Coal,	1	ı
oal,	1	2	Fire-clay,		1
B 1 - 1 '	4	8	Coal,	1	
ire-clay,	6	1	Fire-clay,	3	
ire-clay,ilicious clay,	1	1	Hidden,	8	l
ire-clay, illicious clay, .imestone,	8				1
ire-clay, illicious clay, .imestone,	4	6	1		<u>ا</u> –
Fire-clay, Silicious clay, Limestone, Salcareous slate, Joal,		6		70	,
ire-clay, ilikoious clay, .imestone, .alcareous slate, .alcare	4		SEC. 25, T. 19, R. 18.	70	1
Fire-clay, Silicous clay, Silicous clay, Silicatone, Salcareous slate, Soal, Fire-clay,	4 2 4	6 6	SEC. 25, T. 19, R. 18. Brecciated limestone		1
fire-clay, Silicious clay, Limestone, Salcareous slate,	4 2	6 6	sec. 25, r. 19, r. 18. Brecciated limestone,	70 12	1

VERMILION COUNTY (Continued).

MOUTH OF STONY CREEK.	FEET	IN.	MAKERSON'S BRANCH.	FEET	I
Sandstone with sandy shale,	16		Drift,	32	
lay shale,	2			32	-
oal (seam No. 5),	0	6	HENSON'S COAL MINE, GRAPE CR.	0.	
		_	Thin bedded sandstone,	3	
SNAKE DEN.	24	6	Thick bedded sandstone, Sandy shale,	11	
rift clay,	30		Soft white sandstone,	5	
ellow sandstone,	10		Coal (Seam No. 1),	- 7	
licaceous sandy shale,	12		Hidden,	.3	
	52			45	
LLIS'S BRANCH, NEAR GEORGE-			GRIFFITH'S COAL MINE.		
TOWN.	?		Soil and drift,	20	
rift,	18		Thin bedded sandstone, Silicious clay shale,	8 89	
oal,	3	6	Clay shale,	28	
ire-clay,	?		Fossil bed,		1
rown sandstone,alcareous sandstone,	12		Coal (Seam No. 4),	6	
haly sandstone,	15			101	-
	-	-	LEONARD'S COAL MINE.		
		1	Soil and drift clay,	28	
LAFFERTY'S COAL MINE.	40		Blue limestone, fossiliferous, Black slate, containing nodules	1	1
lack clay shale,	6		of blue fossiliferous limestone,	. 3	
oal (Seam No. 2),	5	6	Coal (seam No. 2,)	6	
ire clay,	5		Fire clay,	6	
idden,			Sandy shale,	12	
and the second second	62	6	Sandy shale,	3	
MAJOR VANCE'S MINE.	90	-			-
rift,	20		1 MILE ABOVE STATE-LINE.	64	1
sandstone,	40		Soil and drift clay,	65	
licious clay with nodular iron		- 11	Black slate,	4	1
ore,ay shale with nodular iron ore	22	- 11	Bluish white clay shale, Calcareous sandstone,	1	1
ossil bed,	20	2	Sandy shale,	- 8	
oal,	6	6		-	-
	116	8	1 MILE ABOVE MOUTH OF STONY	79	10
E. 2 S. E. 2 SEC. 19, T. 19 R.	110	0	CREEK.		
12 w.			Soil and drift elay,	2	
oil and drift,	28		Thin bedded sandstone,	14	
andy shale, with brown calca- reous sandstone,	22		Light gray sandy shale with nodular iron ore,	66	
licious clay shale, with nod-	22		Louis Hon Ore, Fri		_
ules of iron ore,	50	,	1	82	
	100	-	BLACKAMORE'S MINE.	44	
	100		Hidden slope,	44	
			Coal,	4	
	- 1	- 11			

VERMILION COUNTY (Continued).

2 wiles above state line.	FEET	IN.		FERT	
oil and drift clay,	7.		Sandy slope,	28	
lack slate,	4		Clay shale,	84	1 .
ed clay shale,	1	8	Coal (seam No. 4),	6	
licaceous sandstone,	1	4	Fire-clay,	1	1.
andy shale,	1	8	Coal (seam No. 8),	'	11
andstone,	10		Fire-clay,	4	
(idden,	22		Silicious clay shale,	12	1
		_	Blue limestone,	2	1
	40	8	Dark clay shale,	4	1
SEC. 22, T. 19, R. 18.	ł		Coal (seam No. 2),	8	ł
oil and drift,	28		,		1-
[ard micaceous sandstone,	8	1		91	1
andy shale,	15		CAROTHERS & BALL'S COAL MINE.		١
hin-bedded micaceous sand-	į		Soil and drift,	25	1
stene,	15		Clay shale, fossiliferous,	8	
andy shale,	7		Fossil bed,		
• ,			Coal (seam No. 4),	6	1
	68		Fire-clay,	i	
BUTLER'S MILL.	-		Coal (seam No. 8),	i	1
rift clay,			Fire-clay,	5	
hick-bedded sandstone,	18		Silicious clay,	9	1
lay shale with nodular iron			Blue limestone, fossiliferous,	2	l
ore,	4	6	Black slate with nodules of blue	_ آ	ı
renaceous limestone,	2	ľ	fossiliferous limestone,	4	1
lay shale,	ī		Coal (seam No. 2),	4	
lack slate,	î	10	Fire-clay	5	
oal,	Î	2	Fire-clay,	6	1
	6	-	Sandy shale,	14	}
ire-clay,	,				1
licaceous sandstone,] r		Sandy shale with nodular iron		ſ
	-	_	ore,	11	ı
	28	6		100	-
alt fork, 🕯 mile above north	i			102	1
PORK.	-		LEONARD'S QUARRY.		
oil and drift clay,	20		Soil and drift clay,	25	
ilicious clay shale,	20		Thin-bedded sandstone,	8	1
ossiliferous clay shale,	20]	White sandstone, thick-bedded,	14	1
oal (seam No. 4),	6		Sandy shale,	24	
ire-clay,	1	4			1
oal (seam No. 3),	. 1	2		66	1
ire-elay,	4	1			1
ilicious clay shale,	10				1
lue limestone,	2	6			1
lack slate (fossiliferous), coal		1			ı
(seam No. 2),	4	8			ı
ire-clay,	4	1			
	11	١.	11		
andy shale,	1 11		}		

SCHUYLER COUNTY.

s. w. ½ sec. 36, t. 2 n., r. 1 w. F Drift clay, Limestone,	?	IN.	Drift clay,	FEET ?	IN.
Black slate,	8 4 5	6	Black slate,	5 40	6
Shaly sandstone,	40	_	,	48	6
N. W. ‡ SEC. 12, T. 3 N., R. 1 W. Drift clay, Sandstone, Coal, Hidden, Limestone,	9 15 2 8 12	6	MCKEE'S MILL, SUGAR CREEK. S. W. ‡ SEC. 17, T. 2 N., R. 1 E. Drift clay, Shale, Sandstone, Shale, with iron ore,	? 33 25 7	6
	37	6	Limestone,	73	-

CALHOUN COUNTY.

N. E. ‡ SEC. 23, T. 12 N., R. 2 W. Dip 4° N, 10° W. (lower beds.) Hidden. Chert, Limestone, the lower part slaty and ash colored, Hidden, Magnesian limestone, Hidden,	60 10 65 60 41 20	IN.	BATT'S PLACE, SEC. 14, T. 11 S., R. 2 W. Drift clay, Crinoidal limestone, Ash colored, slaty limestone, Blue clay, Gray fossilsiferous limestone, Magnesian limestone, Hidden,	9 9 94 18 12 6 44	12
	256	3	MILE ABOVE HARDIN. Upper beds mostly hidden, Gray limestone, Hidden, Shale, Crystalline limestone, Blue clay, Gray limestone with fossils,	174 ? 6 21 8 5 9 27	

JERSEY COUNTY.

0					
8 miles below grafton, bates'	FRET	in.		PEET	IN.
WOOD YARD.			sec. 10, t. 7 n., R. 10 w.	_	ł
Loess and drift,		1	Drift,	?	
Crinoidal limestone,	44		Limestone in fragments	8	1
Ash-colored shaly and cherty		1	Black slate,	2	l
hade	75			5	i
beds,	1 .		Coal,	- 1	1
Limestone,	20		Fire-clay,	?	l
		1			ł
	189		1)	10	•
RIVER BLUFF, 3 MILES BELOW	1	l i	ON PIASA, 1 MILE S. OF DELHI.		1
MACOUPIN CREEK.				9	i
			Drift,		l
Drift and losss,	!		Coarse-grained sandstone,	8	1
Crinoidal limestone,	80	1 1	Chert,	5	1
Ash-colored shaly bed,	15		Fine grained sandstone,	20	1
Hidden,	78				١.
,				88	1
	123		##G Q m & w p 10	00	ı
			SEC. 9, T. 6 N., R. 18 W.		ł
BAVAGE'S COAL BANK, SEC. 17,	1		Drift clay,	9	1
T. 7 M., R. 10 W.	l		Magnesian limestone,	40	1
Drift,	?		Gray limestone, with fossils,	20	1
Black slate,)	, , , , , , , , , , , , , , , , , , , ,		1
Coal,	2	6		60	l
	, 2	וייו	i l	V	1
Fire-clay,	r				ı
					l
T	ABSTE	THAN S			
			N COUNTY.		
N. W. ½ SEC. 28 T. 4 S., R. 5 W.	FEET			FERT	IN.
N. W. 1 SEC. 28 T. 4 S., R. 5 W. Shale,			Bro't up.	18	IN.
N. W. ½ SEC. 28 T. 4 S., R. 5 W. Shale	FEET		Bro't up.		IN.
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	FEET 12		Bro't up.	18	
	12 1		Bro't up.	18 1	
N. W. ½ SEC. 28 T. 4 S., R. 5 W. Shale	FEET 12		Bro't up.	18 1	6
N. W. ½ SEC. 28 T. 4 S., R. 5 W. Shale	12 1 1 13	IN.	Bro't up.	18 1 1	6
N. W. & SEC. 28 T. 4 S., R. 5 W. Shale,	12 1 13 18	IN.	Bro't up. Coal,	18 1 1	6
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	12 1 13 BO	IN.	Coal,	18 1 1 15	6 6
N. W. 1 SEC. 28 T. 4 S., E. 5 W. Shale,	PEET 12 1 13 BO	ND	Bro't up. Coal, Slate COUNTY. Bro't up.	18 1 1 15	6
N. W. 1 SEC. 28 T. 4 S., E. 5 W. Shale,	12 1 13 BO	IN.	Bro't up. Coal, Slate COUNTY. Bro't up.	18 1 1 15 15	6 1N. 6
N. W. 1 SEC. 28 T. 4 S., E. 5 W. Shale,	12 1 13 BO	ND IN.	Coal,	18 1 1 15	6 1N. 6
N. W. 1 SEC. 28 T. 4 S., E. 5 W. Shale,	PEET 12 1 13 BO	ND	Bro't up. Coal, Slate COUNTY. Bro't up.	18 1 1 15 15	6 6 6
N. W. 1 SEC. 28 T. 4 S., E. 5 W. Shale,	12 1 13 BO	ND IN.	Bro't up. Coal, Slate COUNTY. Bro't up.	18 1 1 15 15	6 6 6
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	12 1 13 BO	ND IN.	Bro't up. Coal, Slate COUNTY. Bro't up.	18 1 1 15 15	6 6 6
N. W. & SEC. 28 T. 4 S., R. 5 W. Shale,	BO FAY	ND IN. 6 6	Bro't up. Coal, Slate COUNTY. Bro't up. Clay shale, Coal, E COUNTY.	18 1 15 15 PEET 4 9 1	6 6 6
N. W. 2 SEC. 28 T. 4 S., E. 5 W. Shale,	BO BO FEET 3 1 4 FAY	ND IN. 6 6	COUNTY. Bro't up. COUNTY. Bro't up. Clay shale, Coal,	18 1 1 15 15 FEET 4 9 1 15	6 6 6 In.
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	BO FEET 3 1 4 FAY.	ND IN. 6 6	Bro't up. Coal, Slate COUNTY. Bro't up. Clay shale, Coal, E COUNTY.	18 1 1 15 15 FEET 4 9 1 15	6 6 6 IN. 6
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	FEET 12 1 13 13 14 15 16 16 16 16 16 16 16	ND IN. 6 6	Bro't up. Coul. Slate COUNTY. Bro't up. Clay shale, Coal, Bro't up.	18 1 1 15 15 15 15 15	6 6 6 IN. 6
N. W. & SEC. 28 T. 4 S., R. 5 W. Shale,	FEET 12 1 13 13 14 15 16 16 16 16 16 16 16	ND IN. 6 6	Bro't up. Coal, Slate COUNTY. Bro't up. Clay shale, Coal, E COUNTY.	18 1 1 15 15 FEET 4 9 1 15	6 6 6 IN. 6
N. W. 2 SEC. 28 T. 4 S., R. 5 W. Shale,	FEET 12 1 13 13 14 15 16 16 16 16 16 16 16	ND IN. 6 6	Bro't up. Coul. Slate COUNTY. Bro't up. Clay shale, Coal, Bro't up.	18 1 1 15 15 15 15 15	6 6 6 IN. 6

CLARK COUNTY.

MOOKED CREEK 1 MILES W. OF	PEET	IN.	14 MILES HAST OF AUBURN.	PEST	I
TERRE HAUTE. Rocks covered with sand, etc. Alternations of clay and sandy	80		Soil	20	8
shales,	15 8 1	7	Sandy clay shale,	1 2	6
Olay,	10 59	7	Sandstone,	40	-
LIVINGSTON. Slope,	80 9		1 MILE SOUTH OF AUBURN. Covered,	25	
Thin bedded limestone, Blue clay,		6	Black limestone,	4	-
Dlay, Sandy shale, Ripple-marked sandstone, Dlay shale,	2 8			49	1
ron ere,	8	1 8			
a layer of large blocks of nodular limestone,					

GREENE COUNTY.

RANDALL'S MILL, SEC. 2, T. 9 N.,	FEET	IN.	BLANCHARD'S COAL BANK.	FERT	IN.
R. 10 W.			Drift,	?	
Drift clay,	9		Sandstone,	8	
Shale,	4		Slate,] [2
Sandstone,	. 9		Coal;	2	8
Shale,	12		Fire-clay,	?	
	25			10	10
21 MILES N. E. OF WHITEHALL.			RIVER BLUFF, N. SIDE OF MA-		
Drift,	. 9		COUPIN CREEK.		
Shale,			Drift,	9	1
Black slate,	1	6	Crinoidal limestone,	68	
Coal,		4	Ash-colored shale,	10	
Hidden,		-	Hidden,	45	
limestone,	4		, ,		
			li	123	l
·**	28	10			1

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fied ale.

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ADAMS COUNTY.

NEAR MENDON.					
	FEET	IN.	S. E. & SEC. 36, T. 3 S., R. 8 W.	FEET	IN.
Drift clay,	2		Loess and drift,	40	
Sandstone,	10	1	Chert in fragments,	18	
Concretionary limestone,	12	60	Crinoidal limestone,	31	
Arenaceous bed,	16		Arenaceous bed,	6	
Magnesian bed,	6		Hidden,	41	
	6		***************************************	100	_
Hidden,	+ 2	25		136	
The second	50	(3)	S. E. 4 SEC. 12, T. 2 N., R. 8 W.	1	
QUINCY CITY (LOWER PART).	1 38	KER	Drift,	9	
	62	100	Gray shale,	15	100
Loess and drift,	33	art (6
Limestone,			Coal,	2	
Hidden,	28		Fire-clay,	10.50	
	123		The second second	17	6
5	COT	r co	UNTY.		
EXETER.	FEET	IN.	SEC. 31, T. 15, N. R. 16 W.	FEET	IN.
and the second s	410000	Tax.		9	444
Slate,	3	0	Drift and loess,	200	11.7
Coal,	2	8	Slaty clay with geodes,	30	10
Clay,	6	HW		30	
Limestone,	22		WINCHESTER.	80	100
Hidden,	12			14	
		-	Limestone,	14	w
and a shoot was consum	45	8	Conglomerate,	16	
N. E. 1 SEC. 14, T. 13 N., R. 12 W.	1500	100	Magnesian bed,	26	
Sandstone,	6	13	The same of the sa	20	
Slate,	3	6		56	
Coal,	2	8			ia:
Fire-clay,	4	-31	The second second	100	
	6			100	
Limostono					
Limestone,			7 (00 - 1111111111)		
Limestone,	22	2	101		
Limestone,	22	107			
Section 2	BRO	WN	COUNTY.		
MT. STERLING ROAD, 2 MILES S.	BRO	107	COUNTY. 2 MILES N. OF MT. STERLING.	FEET	IN
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL.	BRC FEET	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay,	40	IN
MT. STERLING ROAD, 2 MILES S.	BRO	WN	COUNTY. 2 MILES N. OF MT. STERLING.	12.00	IN
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL.	BRC FEET	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay,	40 10	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay,	BRO FEET 20	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay,	40	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay,	BRO FEET 20 2	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay,	40 10 50	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay,	22 BRC FEET 20 2 3 56	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay,	40 10 50 ?	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay,	BRO FEET 20 2 3	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay,	40 10 50	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale,	22 BRO FEET 20 2 3 56 81	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone,	40 10 50 ?	IN
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5,	22 BRO FEET 20 2 3 56 81	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT, STERLING. Drift clay, Limestone, Clay,	40 10 50 ?	IN
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W.	22 BRO FEET 20 2 3 56 81	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone,	40 10 50 ? 2 5 25	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay. Limestone. Kire-clay. Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay.	22 BRO FEET 20 2 3 56 81	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT, STERLING. Drift clay, Limestone, Clay,	40 10 50 ? 2 5	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale,	22 BRO FEET 20 2 3 56 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale,	40 10 50 ? 2 5 25	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate,	22 BRC SEET 20 2 3 56 81	WN	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE.	40 10 50 ? 2 5 25 25 32	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal,	22 BRO FEET 20 2 3 56 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay,	40 10 50 ? 2 5 25 25 32	IN
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate,	22 BRC SEET 20 2 3 56 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale,	40 10 50 ? 2 5 25 25 32 105 15	STATE OF THE PARTY
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal,	22 BRO FEET 20 2 3 566 81 ? 10	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone,	40 10 50 ? 2 5 25 25 32 105 15	STATE OF THE PARTY
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay,	22 BRO FEET 20 2 3 56 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT, STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale,	40 10 50 ? 2 5 25 32 105 15 1	CONTRACTOR OF THE PARTY OF THE
MT. STERLING ROAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Kire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK.	22 BRO FEET 20 2 3 56 81 ? 10 2 2 2	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal,	40 10 50 ? 2 5 25 32 105 15 1 3 2	STATE OF THE PARTY
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Kire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, LITLE MISSOURI CREEK. Drift clay	22 BRC FEET 20 23 56 81 ? 10 2 2 2 14	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay,	40 10 50 ? 2 5 25 32 105 15 1 3 2 7	CONTRACTOR OF THE PARTY OF THE
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Kire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, LITLE MISSOURI CREEK. Drift clay	22 BRC FEET 20 23 56 81 ? 10 2 2 2 14	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay,	40 10 50 ? 2 5 25 32 105 15 1 3 2 7 6	CONTRACTOR OF THE PARTY OF THE
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay Shale, Shale, LITTLE MISSOURI CREEK. Drift clay Shale,	222 BRO FEET 200 2 3 566 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Limestone, Shale, Limestone, Shale, Limestone, Limestone, Limestone, Limestone, Limestone,	40 10 50 ? 2 5 25 32 105 15 1 3 2 7	
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay, Shale, Limestone,	22 BRC FEET 20 23 56 81 ? 10 2 2 2 14	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Limestone, Shale, Coal, Fire-clay, Limestone, Shale, Shale,	40 10 50 ? 2 5 25 32 105 15 1 3 2 7 6	
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay Shale, Shale, LITTLE MISSOURI CREEK. Drift clay Shale,	222 BRC FEET 200 2 3 566 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay, Limestone, Shale, Coal, Fire-clay, Limestone, Shale, Blue clay,	40 10 50 ? 2 5 25 32 105 15 1 3 2 7 6 8 6	CONTRACTOR OF THE PARTY OF THE
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay, Shale, Limestone,	222 BRC FEET 200 2 3 566 81	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay, Limestone, Shale, Shale, Coal, Fire-clay, Limestone, Shale,	40 10 50 2 5 25 32 105 15 1 3 2 7 6 8 8 6 25	CALL DESCRIPTION OF STREET
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay, Shale, Limestone,	222 BRC FEET 20 2 3 566 81 ? 10 2 2 2 14 ? 12 5 ?	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay, Limestone, Shale,	40 10 50 2 5 25 32 105 11 3 2 7 6 8 6 25 25 25 25 25 25 25 25 25 25 25 25 25	CALL DESCRIPTION OF STREET
MT. STERLING BOAD, 2 MILES S. OF CAMPBELL'S COAL. Drift clay, Limestone, Fire-clay, Gray shale, CAMPBELL'S COAL BANK, SEC. 5, T. 1 N., R. 3 W. Drift clay, Shale, Slate, Coal, Iron clay, LITTLE MISSOURI CREEK. Drift clay, Shale, Limestone,	222 BRC FEET 20 2 3 566 81 ? 10 2 2 2 14 ? 12 5 ?	IN.	COUNTY. 2 MILES N. OF MT. STERLING. Drift clay, Limestone, 3 MILES N. OF MT. STERLING. Drift clay, Limestone, Clay, Gray shale, BLUFFS AT LAGRANGE. Drift clay, Shale, Limestone, Shale, Coal, Fire-clay, Limestone, Shale, Shale, Coal, Fire-clay, Limestone, Shale,	40 10 50 2 5 25 32 105 15 1 3 2 7 6 8 8 6 25	CONTRACTOR OF THE PARTY OF THE

PIKE COUNTY.

11 MILES FROM THE MOUTH OF	FEET IN.		FEET	IN
FISH-HOOK CREEK.		Crinoidal limestone,	16	
Drift clay,	4	Arenaceous bed,	23	1
Blue marlites,	14	Hidden,	72	
Magnesian bed,	6		-	
Hidden,	24	A THE REST PARTY OF THE	111	
	_	N. E. 2 S. 16, T. 5 S., R. 4 W.	100	
A THEORY OF THE PARTY OF THE PA	48	Drift,	9	
ROCKPORT.	100	Shale,	6	
Drift clay,	. ?	Black slate,	3	
Crinoidal limestone,	15	Coal,	1	-
Hidden,	30		-	-
Shale,	3	7 Sept Sept 2 - 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10	-
Oolitic conglomerate,	4	4 MILE WEST OF BARRY.	100	
Slope,	80	Crinoidal limestone,	15	
		Ash colored shale,	3	
	132	Hidden,	24	
KINDERHOOK		(13) 102.9 (13) (13) (13) (13)		
Loess and drift clay,	?		42	
Crinoidal limestone,	13	MONTEZUMA.	7.1	
Buff-colored arenaceous bed,	1000	Drift clay,	9	
with fossils,	23	Crinoidal limestone, 30 ' to	50	
Concealed,	56	[[]]	10.70	l
			50	
	92	N. W. 2 SEC. 18, T. 3 S., R. 4 W.		
WELLS' PLACE, SEC. 17, T. 7 S.,		Gray shale,	12	
R. 4 W.		Fossiliferous slate,	3	6
Magnesian limestone,	10	Black slate,	4	5
Gray limestone,	12	Coal,	1	1
Hidden,	30		_	
210000,	00		21	,
	52	11 MILES N. W. OF PERRY.		W.
1 miles below atlas.	0.2	Magnesian bed,	18	
Drift,	2	Geode bed,	45	
Crinoidal limestone,	12	Limestone,	4	
Arenaceous bed,	8	Limicoloue,	- 1	
Hidden,	18		67	
Shale	36		01	
Shale,	2			
Ring elev				
Blue clay,	27			
Hidden,	27			
	147			
	cDONOH			_

McDONOUGH COUNTY.

2 MILES N. W. OF MACOMB. Shaly sandstone,	5 10	IN.	N. W. 4 SEC. 33, T. 4 N., R. 3 W. FEET I Drift clay,	N.
Coal,Clay,	1	1	Coal, 2	
N. W. ‡ SEC. 13, T. 5 N., R. 4 W.	16	1	CROOKED CREEK, CARTHAGE AND	
STARKEY & DAVIS' COAL BANK. Drift clay,40' to	100		Drift clay,40' to 60 Sandstone, 6	
Shale,	20	6	Shale,	
Coal,2' 6" to	- 8		Hidden, 53	
	74	6	132	

McDONOUGH COUNTY (CONTINUED).

LOWRY'S COAL BANK.	FEET	1N.	s. w. 1 sec. 11, T. 5 N., R. 4 W.	perplin
		Live		PEEL IN.
Shaly sandstone,	4		Drift,	100
Coal,			Shale,	3
Shaly sandstone			Coal,	2
Concretionary limestone, 12' to			Hidden,	44
A STATE OF THE PARTY OF THE PAR		- 11	Black slate,	1
	37	- 11	Fire-clay,	9
			Shale with iron ore,	6
		. 1	Concretionary limestone,	15
		11	THE PERSON NAMED IN COLUMN	80

WARREN COUNTY.

N. W. ‡ SEC. 16, T. 11 N., R. 11 W. Drift clay,		IN.	N. E. & SEC. 26, T. 9, N. R. 1 W. Sandstone and shale,	FEET 3	IN.
Shale,	6	4	Blue slaty limestone,	8	10
Black slate,	3		Black slate,	2	6
Coal,	2	100	Coal,	S	100
			Slate,	1	
The state of the s	81		Sandstone,	2	141
N. E. 4 SEC. 14, T. 14 N., R. 11 W.	11		and the second second		_
Drift,	10	05		19	6
Shaly sandstone,	8	1	CEDAR CREEK, 3 MILES N. OF	33	
Limestone,	6		MONMOUTH.		410
Coal,	4	6	Drift clay,	15	16
The second second second			Black slate,	2	100
The second second	23	6	Shale,	8	11.75
TUCKER'S COAL BANK, N. W. 1 SEC. 9, T. 8 N., R. 1 W.	20		Crinoidal limestone,	36	
Slate,30' to	40			61	
Septaria,	1			100	
Shale with iron ore,	3	6	SEC. 19, T. 9 N., R. 3 W.		
Black slate,	3		Shaly sandstone,	12	
Shale,	6		Massive sandstone,	14	
Coal,	6 2	9	Dark blue slate with iron ore, .	8	
	-		The state of the s		1
and the same of the same	55	8	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	34	

HENDERSON COUNTY.

ON HENDERSON RIVER, 21 MILES	FEET IN.					1.
S. E. OF OQUAWKA. Drift clay,	9		1,000		144	E
Crinoidal limestone	30		137		-phil	Danie.
Ash-colored grit-stones,	20				north free	900
	50 4	-	11111	control of	will be	100

74

ROCK ISLAND COUNTY.

Drift clay 50' to 75 Shaly sandstone 10 Black slate 4 Coal 1 Shaly limestone 4 Massive sandstone 20	BLUFFS OF ROCK RIVER, OPPOSITE CAMDEN.	FEET	IN.	111	
Shaly sandstone,		75			1 1
Black slate,		10			1 1
Coal,	Black slate,	4			1 1
Massive sandstone, 20	Coal,	1	4	1	
Massive sandstone, 20	Shaly limestone,	4			
Devonian limestone 10	Massive sandstone,				1 1
	Devonian limestone,	10	-		1 1
		124	4		

HANCOCK COUNTY.

1 MILE ABOVE THE STEAMBOAT LANDING, NAUVOO. Drift clay, Sandstone, Concretionary limestone, Arenaceous bed,	20 12 5 25	BLUFFS BACK OF APPANOOSE. Drift, Concretionary limestone, Arenaceous bed, Geode bed,	? 42 28 30
Geode bed,	38 16 116	s. w. ‡ sec. 24, t. 4 N., R. 6 w. Drift, Sandstone, Concretionary limestone, Arenaceous limestone and mar-	
Concretionary limestone, Magnesian limestone, Geode bed,	10 9 10	lites,	20 62

SCHUYLER COUNTY.

KING'S MILL, N. W. 2 SEC. 15, F	EET IN.	BIRMINGHAM.	FEET IN-
T. 3 N., R. 4 W.	1	Drift,	20
Sandstone,	12	Quartzose sandstone,	14
Black slate,	3	Concretionary limestone,	18
Hidden,	34	Arenaceous bed	16
Magnesian bed,	10	Magnesian bed,	10
Geode bed,	24	Geode bed,	40
		Limestone,	16
	83		
S. E. 1 SEC. 17, T. 3, N. R. 4 W.		W-	134
Drift clay,	?	N. E. 2 SEC. 18, T. 2 N., R. 1 W.	
Black slate,	2	Shale,	
Coal and shale,	1 6	Limestone,	1
Sandstone,	1 6	Black slate,	3
Concretionary limestone,	10	Coal,	4
	19 6		14

HANCOCK COUNTY.

MONTEBELLO COAL SEAM, S. W.	FEET	IN.	OLD MILL, MONTEBELLO.	FERT	IN.
\$ SEC. 5, T. 5 N., R. 8 W.	Lings	Nº 15	Drift clay,	2	100
Drift clay,	9 p	100	Magnesian bed,	2	100
Shale,	25	200	Geode bed,	20	10
Slate,	5		Limestone,	40	100
Coal,	1	100		-	
Sandstone,	25		A CONTRACTOR OF THE PARTY OF TH	62	100
			LITTLE'S COAL BANK, S. W. 1		×
The state of the state of	56		SEC. 7, T. 5 N., R. 3 W.	100	
BLUFFS, OLD FORT EDWARDS,	00		Drift clay,	9	200
WARSAW.	Jan. 27		Shale with fossils,	6	١.
	20			0	
Drift clay,	10		Iron ore,	100	
Magnesian beds,	1000	1	Septaria,		9
Geode beds,	45	MARIN	Black slate,	00	6
Limestone,	16	95.7	Gray shale,	38	
THE PERSON NAMED IN COLUMN	-	100	Clay slate,	1	6
- And the state of the state of the	91		Coal, 2' 6" to	3	0
GRAVEYARD CREEK, WARSAW.	10000	60		-	-
Concretionary limestone,	5	1161	Marie Landson and Marie Landso	50	1
Arenaceous beds, with marlites,	25		WILLIAMS' CREEK, 1 MILE OF	-	-
Magnesian beds,	10		PULASKI.	120	740
Geode bed,	45	0 1	Drift,	9	6
Limestone,	10		Sandstone,	14	1
	-	(400)	Shale,	16	
	95		Coal,	2	
3 MILES N. E. OF WARSAW.	00		Hidden,	8	0
	20	1200	Fire-clay,	3	177
Drift clay, Limestone and marlites,	25	911	Fire-ciay,	0	
	-	0 1	The second secon	40	0
Cherty beds,	56		THE RESERVE OF THE PARTY OF THE	43	6
Light gray limestone,	12		1 MILE BELOW HIBBARD'S, NAU-		100
makiban trible		1111	Y00.	1	-
The second secon	113	101	Geode bed,	10	
TOTAL TOTAL CONTRACTOR OF		WALL.	Limestone and marlites,	30	
the same of the sa		100	Cherty beds,	20	
The second secon		1	A SHARES STREET WAS U	2000	
		100		60	

LA SALLE COUNTY.

The state of the s	FEET	IN.	LA SALLE, CORNER OF BEELEN	FEET	IN.
PERLEY'S.			AND LA SALLE STREETS.	C 4 79	
Soil and alluvium	4		Gray crystalline limestone	7	
Indurated clay	6		Blue shale	5	
Coal	1	6	Limestone, with earthy part-		
Clay	6	1	ings		8
Sandstone		9	Black slate		
Limestone	100	2	Coal	6	
Indurated clay	2	6	Shale		9
Sandstone, Silurian		9		-	14
TOI I to the first to the soul of		1	A THE CONTRACTOR OF THE PARTY O	1000	

- Indiana and

VERMILION COUNTY.

PAINE'S COAL MINE.—DANVILLE.		IN.	PERRYSVILLE.	FEET	IN.
Soil and drift clay	15		Soil and drift clay	!	
Coal (Seam No. 4.)	6	6	Clay shale	8	_
Fire clay	1	4	Coal	1	8
Coal (Seam No. 3.)	1	6	Black clay shale	2	
Fire clay	5		Blue limestone	3	•
Silicious clay	9		Dark clay shale	16	•
Blue limestone	2		Light silicious clay shale	17	
Black slate, with nodules of blue		l			
fossiliferous limestone	4	1		48	. 8
Coal (Seam No. 2)	4		HORSE-SHOE BEND.		
Fire clay	5		Soil and drift clay	?	
Sandy shale	9	1	Clay shale	5	
Hard calcareous sandstone	14		Black bituminous shale	1 1	8
Sandy shale with nodular iron			Coal	4	•
ore	12		Fire-clay	4	
Hidden	10		Sandy shale	19	ļ
			Arenaceous limestone	5	
	98	4	Coal		
BELOW MOUTH OF GRAPE CREEK.		1			
Soil and drift clay	6			88	9
Light sandy shale with nodular		1	EUGENE.	"	
iron ore	22	1 1	Sand and gravel	11	
Clay shale	28		Black slate	l i	
Blue calcareous slate	3			l il	
Black bituminous slate	3		Clar shale	1	•
DIRCK DITUMINOUS SIRTE	8		Clay shale		
			Blue sandy shale	8	
VERMILION COUNTY, IND.	62			22	- 1
	1		WILLAMSPORT.		•
The following sections in			Heavy bedded sandstone	20	
Indiana are given, because the			Yellow shaly sandstone	6	
coal beds which crop out at			Blue and red limestone	1	
the places named extend into					
some of the counties of Illinois.	1		Sandy shale	5	
ONE MILE ABOVE EUGENE.	١.			32	
	,,,		•	3Z	
Soil and drift clay	11				
Black bituminous shale with	1		1	1	l
nodular iron ore	12			1	l
Black slate	8			1	l
Coal	2			1	1
Hidden	12			1	1
					ŀ
	43		•	1	

LA SALLE COUNTÝ.

<u> </u>					
PERU COAL MINING COMPANY.	FEET	IN.		FRET	IN.
Common clay	29	8	Brought forward	104	4
Blue sandstone	į.	7	Sandstone	20	1
Blue shale	89	1	Blue shale	2	ŀ
Red shale	3		Sandstone	92	1
Brown shale	10	2	Blue shale		8
Black slate	11	1 1	Sandstone	16	ľ
Coal	4	6	Brown shale	8	
Fire-clay		4	Blue slaty shale	5	
					-
Carried forward	104	4	Carried forward	248	l

LA SALLE COUNTY (Continued).

•			4.7		
D 14.6.	FEET	IN.		FEET	IN
Brought forward	248		Brought forward	72	6
Black slate	8	H	Coal		
Bluish slate	3		Indurated clay	19	
Brown shale	6		Sandstone	18	
Gray limestone	4		Shale	19	
Dark brown shale	1	6	Black slate	6	
Hard blue shale	1	6	Coal	5	
Black slaty shale	2		Fire-clay		
Black slate	3	10	Sandatone	6	
Coal		6	Sandstone	20	
Brown slaty shale	1	9	Limestone	1	
	i	9	Shale	16	
Dark shale	1		Black slate	10	
Limestone		8	Coal	6	
Bluish slaty shale	8	3	Fire-clay	2	6
Limestone	1	10	Limestone	6	
Gray slaty shale	8		Clay shale	2	
Brown shale	3	8	Limestone	3	
Dark Brown shale	7		Shale	50	6
Blackish slaty shale	11	11	A SAME TO A SECURITY OF THE SE		_
Dark brown shale	1		and the same of the same of the	263	
Black slate	8	4	BORING IN SEC. 11, T. 31 N., R.	200	
Coal	3	6	3 E., FOR A. CAMPBELL.		
	_	_	Soil and drift	70	
	329	4	Indurated clay		
ADAMS AND PULSIFER'S BORING.	020		Indurated clay	20	
NORTH OF LA SALLE.			Limestone	6	
Soil and drift	59		Indurated clay	9	
			Black slate	3	
Limestone	17	0	Coal		4
Blue shale	2	6	Clay	9	
Red shale	8		Sandstone	12	
Blue shale	10		Indurated clay	11	
Coal		4	Black slate	1	6
Blue shale	6		Limestone	2	6
Limestone	3	6	Shale	2	6
Blue shale	24		Black slate	8	_
Red shale	3		Coal	7	
Blue shale	4			•	
Limestone	1	6		161	10
Blue shale	12		BORING AT MENDOTA.	101	10
Limestone	6			_	
Shale	9	6	Clay	5	
Black shale	9		Quicksand	2	
Red shale	3		Clay	23	
Limestone	3	11	Gravel	8	
		11	Clay	48	
Shale	65		Sand	2	
Slate	7	.	Indurated clay	32	
Shale	3	6	Limestone	10	
Coal	4	4	Indurated clay	3	
	-		Sandstone	5	
	261	2	Clay	8	
J. A. ROCKWELL'S BORING, NEAR	1		Sand	1	
THE CANAL BASIN, LA SALLE.			Limestone	33	
Alluvium	53			99	
Limestone	1	6		300	
Indurated clay	18			180	
Amada diay	10				
Coming Comming	-			1	
Carried forward	72	1 6		2.9	

LA SALLE COUNTY (Continued).

PERU, HILL EAST OF "CHAMBER'S HOUSE."	FEET	IN.	MITCHELL'S PLACE, BUFFALO ROCK.	FEET	IN.
Soil and slope			Soil and sand	2	- 6
Yellowish limestone	5		Clay and sand	5	
Reddish shale			Yellow indurated clay	.3	
Blue shale	5		Blue indurated clay 4 to	6	
Limestone	4		Coal 1, 6 to	2	10
Black slate	1	8	Clay 1 to		6
Shales, with carbonaceous mat-			Sandstone, Silurian	133	6
ter	6	6	The second second second second second	_	-
Coal	1.3	5		153	4
Blue shale	11			(- (
Fragmentary limestone	10				
	48	7			

WHITE COUNTY.

NEAR GRAYVILLE.	FEET	IN.		FEET	IN.
Soil,	3		Brought forward,	16	1 8
Shale,	14		Sandstone,	2	150
Black slate,	6		Slate,	1	1
Fossil bed,	1 0	3	Slaty clay,	2	
Black slate,	1	8	Reddish gray shale,	1	1
Shale,	4		Sandstone,	5	
Section 1	_	_	Gray shale,	2	
	28	11	Sandstone,	2	
RIVER BANK, NEAR GRAYVILLE.	1.750	3.7	Sandy slate,	6	
Soil,	2	1 (1)	Coal,	í	
	14			i	
Shale,	1	8	Char shale	10	
Black slate,	3	0	Gray shale,		
Impure limestone,	0		Sandstone,	8	
Coal,		8	Clay shale,	5	
Shale,	3		Clay,	8	
	24	4		72	11
ARTESIAN WELL, GRAYVILLE.	131		HIGHT'S SHOALS.		-
Soil and clay,	18	- 1	Gray sandstone,	30	
Sand and gravel,	4		Brown sandstone,	20	
	18	- 11	Chalm sandstone	15	
Blue shale,	2	- 1	Shaly sandstone,		
Sandstone,			Sandstone,	30	
Blue shale,	3	- 11	Slate,	4	
Sandstone,	4		Coal	1	
Shale,	26		Sandstone,	20	
Black slate,	2.1	10		_	-
Shale,	12			120	
Flinty bed,	1	4	CHERRY'S FARM.	40.0	
Sandstone,	7	- 1	Clay, with iron ore,	7	
	_	-	Coal,		8
	96	2	Sandstone,	3	
CARMI.			Shale,	3	. 6
Shale,	8	1	Dark gray slate,	8	
Clay slate,	5	11	Sandstone,	2	
Black slate,	1		Sandy clay,	2	6
Coal,		8	Clay, with iron ore,	-	3
	2	0	Slaty clay	6	9
Clay,	2		Slaty clay,	6	
Carried forward,	16	8		32	6

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GALLATIN COUNTY.

N. W. 🛨 SEC. 15, T. 10 S., R. 8 E.	FEET	IN.	EQUALITY.	FEET	IN
Sandstone,	14		Soil,	6	
Thin bedded sandstone	8		Clay,	15	
Clay shale,	8	8	Sandy Clay,	4	
Black slate,		10	Clay,	2	Ľ.
Coal,	4	6	Shale (covered),	9	
Covered with sandstone debris	77	ľ	Coal,	3	
TOTAL OF THE SHEET OF THE WORLD			Sandstone,	44	
•	108	•	Cool		
TALBOT ENTRY, E. OF SALINE	100		Coal,	1	17
RIVER.			Covered slope,	17	1
			Shaly sandstone,	8	
Sandstone,	3	6	Clay shale,	7	
Clay shale,	5	6	Gray shaly sandstone,	-2	
Limestone,	3		Black sandstone,	1	1
Coal,	3	9	Grav shaly sandstone,	4	1
		-	Covered slope (includes black	THE R	
	15	9	shale and beds of limestone,	56	
N. E. 1 S. W. 1 SEC. 88, T. 10 S., R. 8 E.			Coal,	4	
Conglomerate,					
Sandy shale,	8	- 1	WORTH BORY OF GALLERY		
Arenaceous slate,	11		NORTH FORK OF SALINE RIVER,		ħ.
Limestone, with archimedes,			SEC. 18, T. 7 S., R. S E.		
ramescone, with archimedes,	12		Covered slope,	34	
		-	Blue clay,	4	
	81		Argillaceous iron ore,	_1	
n. w. 1 s. e. 1 sec. 84, r. 10 s.,			'Clay shale,	5	
R. 8 E.			Coal,	F BAY	
Sandstone,	18		Shale,	3	
Shaly sandstone,	33		Sandy limestone	2	11
Clay shale,	7	4	Shaly sandstone,	3	
Black slate,		10	75.75	-	_
Coal,		8	101	53	12
Pire-clay,		9		-	
Clay shale,	3	6			
Sandstone,	۰			0	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		- 1		0	

## EDWARDS COUNTY.

BRESENDEN'S FARM, SECTION OF	FEET	IN.	BRANCH, EAST OF AND NEAR TO	FEET	IN.
WELL.		- 11	ALBION.		377
Soil and clay bed	16	0	Thick bedded sandstone	4	0
Yellow limestone		8	Sandy shale	8	1
Blue limestone		6	Hard sandstone, blue	7	r
Coal		1	Blue limestone	9	9
			Clay shale	2	0
	17	3	Sandy shale	5	0
RAILROAD CUT, NEAR ALBION.		Н	Sandstone flags	1	
Soil	8	0			
Sandy shale	4	6	1111-2441	90	
Sandstone flags	1	5	The two last beds are the )	20	
Sandy shale	3	2	upper ones at the R.R. cut.	OCTAL N	16
Sandstone, thin plates	_	9	-ppor once at the knin. can,	100	
Sandstone	5	ااه		. 0	00
Sandy shale	10	6		y military	MM.
	-00				

# EDWARDS COUNTY (Continued).

NORTHERN LIMIT OF ALBION.	FEET	IN.	BENNINGTON MILLS, N. W. & SEC.	FEET	IN.
Sandy shale	5	0	17, T. 1 N., R. 10 E.		
Sandstone	7	0	Soil and clay	20	0
Sandstone, blue	4	0	Sandstone	11	0
Sandstone flags		0	Coal	0	3
Sandstone		4	Fire-clay	0	4
Iron ore	0	2	Brown shale, with coal	1	7
Coal	2	3	Blue clay shale	1	4
Fire-clay	0	?	Sandstone, ferruginous,	1	4
and an Assault and the collection of the	-	-	Coal	0	5
	. 26	9	Blue clay shale	3	6
ORANGE'S FARM, N. W. 1 S.W. 1 SEC. 24, T. 2 S., R. 10 E.			Iron ore	6	6
Soil and clay	5	5		-	_
Sandstone	. 9	0		46	6
Hard sandstone	6	0			
Black slate		0	i		
Clay shale		0			Y
	31	5			

## WABASH COUNTY.

HARTMAN'S PLACE, S. 1/2 S. W. 1/2 FEE SEC. 5, T. 1 S., R. 12 E.	T	IN.	D. BIEHL'S MILL.	FEET	IN.
Clay shale	9	10	Brown sandstone	1	9
Indurated brown clay	0	3	Black slate	2	0
Black slate	4	8	Coal		10
Black limestone	1	8	Clay shale		8
Coal	1	6	Grav sandstone		?
_	-		Contract of the Contract of th	-	-
1	7	1		6	3

## RICHLAND COUNTY.

CLAREMONT.	FEET	IN.	BRICKLEY'S FARM, S. E. 1 N. E. 1	FEET	IN.
Soil and clays	22	0	SEC. 32, T. 4 N., R. 14 W.		-
Indurated blue clay	10	0	Sandy shales	3	(
Sandstone		0	Thick bedded sandstone	2	. 6
Bastard limestone	4	0	Sandy shales	2	
Sandstone	6	0	Soft yellow sandstone	3	(
Pebbly limestone		0	Blue clay		
Blue slate, with thin coal	4	6	The second secon	-	_
Gray fragmentary limestone	13	6		11	(
		-	BAKER'S PLACE, N. E. 1 S. W. 1		
	70	0	SEC. 9, T. 4 N., R. 14 W.	1	
JOHN COLLINS' PLACE, N.W. 1 N.			Soil and clay	6	0
E. 2 SEC. 30, T. 4 N., R. 14 W.		- 1	Sandy limestone, shaly	.?	
Sandstone	?		Pebbly limestone	3	6
Black slate	3	0	Blue clay	?	
Coal	0	8			
Fire-clay	?	- 11			

## LAWRENCE COUNTY.

BARRAS RIVER, LAWRENCE- VILLE.	FEET	IN.	SEEDS' QUARRY, N. E. \(\frac{1}{4}\) S. W. \(\frac{1}{4}\) SEC. 13, T. 3 N., R. 12 W.	FEET	IN.
andy shales, with iron ore	5	0	Argillaceous shale	6	
ack clay shales	4	6	Yellow sandstone	3	
apure limestone	1	6	Blue micaceous sandstone	2	쪲
lack slate, with thin coal	0	0	Dide inteaccous sandstone	4	300
mek sinte, with thin cont	0		100, 1111111111	-	
ALTONIA MODELLA	11	0		11	
	TT	0			
SEC. 9, T. 3 N., R. 10 W.	100	(C)	S. H. CLUBB'S QUARRY, SEC. 5,		
xact thickness of the beds not	100.34		T. 3 N., R. 11 W.	1 22	1
ascertained,			Covered slope,	15	
lay shales,			Sandy shale,	1000	1
haly sandstone,	1000		Yellow sandstone,	1	1
ompact sandstone,			Blue sandstone,		
lay shales,	600		WILL SOUTH THE WAY	1	-
lack slate,	-		Office and and the State of the	17	10
lack limestone,		6	EMBARRAS-RIVER, PLANK ROAD	OFFICE .	
lay shale,			BRIDGE.	100	6
mpure limestone,			Sandstone,	4	1
lack slate,			Sandy shale,	6	1
	_	-	Shaly sandstone,	5	1
Total thickness,	182		Clay shales, 8 bands of iron ore	19	
BANK OF WABASH RIVER, SEC.		- 1	Fossil bed, pyritous,	1	
33, T. 4 N., R. 10 W.			Shales with iron ore,	3	
Indiana shore.	V 3		Black slate,	3	
Soil,		1 11	Impure limestone,	1	
farly clays,	40		Black slate,	1	
shaly sandstone,	6		Clay shales,	29	
hick bedded sandstone,	55		Oldy blimos,	20	
mich beinen billiabourgitti	- 00			74	
- XV	10	0.00			
N. E. 1 S. W. 2 SEC. 13, T. 3 N.,					
R. 11 W.	Time.		the same of the same of the same of	100	1
Yellow clay shale,	5	6	Trade	1	10
Blue clay shale,	2				1
	-	8	and the second second second	1	1
Coal,		9	A DOMESTIC OF THE PARTY OF THE	1	1
Fire-clay,		-			1
		1			1

## POPE COUNTY.

ONE MILE AND A HALF BELOW FI JAMES CARROLL'S PLACE.  Sandstone Limestone Marly slate Limestone Shale Limestone Sandstone Sandstone	10 8 4 6 5 11 10	1N. 6	LUSK'S CREEK, NEAR GOLCONDA. Sandstone Limestone Shale Limestone Marlite Limestone	
Section State	54	6	4	

## POPE COUNTY. Continued).

45 22 5 73 80	6 9	Sandstone Limestone D. FLANNERY'S PLACE Sandstone Limestone Shale Clay slets	16 5 7 2	10
73 80		D. FLANNERY'S PLACE. Sandstone	16 5 7	10
73		Sandstone	5 7	
73		Sandstone	5 7	
73		Sandstone	7	5
80		Limestone	7	5
80		Shale		
			2	
		Clay elete		
1		Olay Blate	3	
	10			
8				5
89	10		25	
		Sandstone		
		Covered		
	- 4	Clay slate	5	
13	× 1			
- 01			133	
81	4			
05				
1	0		100	
47	R			
	1 8 89 30 32 6 13 81 25 21 1	1 10 8 10 89 10 30 32 6 13 81 25 21 1 6	1 10 89 10 89 10 Sandstone Limestone Covered Clay slate  25 21 1 6	1   10

### WILLIAMSON COUNTY.

DR. SMITH'S PLACE.	FEET	IN.	FOZARD'S PLACE, SEC. 20, T. 9 S.,	FEET I
Soil and drift			R. 1 E.	
Sandstone	28		Shales	8
Clay shale	8	- 11	Coal	8
Coal	1	6		
Alternations of clay shales, fire			- *-	11
clay, sandstone and sandy		- 11	E. N. SPILLER'S PLACE, S. E. 1,	
shales	22	- 11	S. W. 1, SEC. 6, T. 9 S., R. 3. E.	
Shaly sandstone	12	- 11	Soil and clay	
Limestone	3	- 11	Limestone	
initiation in the state of the	_ "		Bituminous slate	
	94	0	G	4
	94	0	Coal	9
ROCK CREEK, SEC. 9, T. 9 S., R.	1	- 11		
				13
Clay slate	8	10		
Bituminous slate	1	6	the same of the	
Coal 4 to		6		
Fire clay	2	1		
	-	-		l
	12	10		

## MARION COUNTY.

BORING AT CENTRALIA.	FEET	IN.		FEET	IN.
Soil	3		Brought forward	237	
Blue clay and sandstone	20	6	Limestone	6	18
Sandstone	1	10	Indurated clay	83	6
Blue clay (light colored)	10	1000	Bituminous slate	2	
Blue clay (dark)	55	8	Coal	3	
Bituminous slate		8	Limestone	20	
Blue clay, with gravel	3	6	Indurated clay	151	
Blue slate	25	6	Sandstone	25	
Indurated clays	91	4	Black slate	6	
Limestone	91		Indurated clay	65	13
Coal	6		Iron stone, with chert	3	1776
Indurated clay	12		Indurated clay		-
Carried forward	00#	-		200	-

### PERRY COUNTY.

	EEET	IN.	of Distance of Contract Of	FFET	IN
Yellow clay	18		Brought forward		
Sand	2		Bluish impure limestone	2	
Blue clay	6	36	Bituminous shale	6	10
Shale	10		Light colored shale	10	A
Drab limestone	3	9	Coal		11
Fire clay	6	18.74	Fire clay	?	150
Light colored shale	1	6		1	
	-	-		_	_
Carried forward	47	6	The second	72	1

### MADISON COUNTY.

LONG'S PLACE, CLIFTON QUARRY. Covered slope	170 2	6 6	Brought forward	40 9 20	IF IT
Carried forward	261	11		339	

### ALEXANDER-COUNTY.

THEBES.	FEET	IN.	SILURIAN ROCKS OF ALEXANDER	FEET	1
lays	42		COUNTY.	Sealing.	
andstone	24		Sandstone	22	
overed slope			Cherty bed	8	
	- 74		Buff colored shale	10	
	96	- 1	Cherty beds	248	
GILES WHITTAKER'S PLACE.	1	. 11:	Mottled limestone	20	
lay and shale	10		Blue limestone	25	П
berty beds	170		Shales and slate	70	
The second second	-		Sandstone		1
Name and Address of the Parket	180		Shale		
ORCHARD CREEK.	I PARTY	1	Limestone		
erruginous conglomerate	37	1	Sandstone	18	
andstone		. 11		JPS.	
Blue clay	?			535	1
The state of the s	-	1	A DESCRIPTION OF THE PARTY OF T	11/11/11	

## HARDIN COUNTY.

The second secon					
LEAD HILL. FI	EET	IN.	PARKINSON'S PLACE.	FEET	11
Sandstone	20		Sandstone	23	1
Limestone	59	6	Limestone	60	
Oŏlitic limestone	30		Sandstone	4	dia
Crystalline limestone	2	- 11	Limestone	22	
Bluish limestone	57	11			
Dittisa amestone	-	_		109	
	168	6		641	
ONE MILE BELOW "CAVE IN		1		U a l	
ROCK."  Cavernous limestone	20	- 11			
	10	- 11			
Covered	4	- 11		5 1 9	
Shelly limestone	20	- 11			
Limestone with corals	20	- II			
	54				
PI	ULA	SKI	COUNTY.		
	ET	IN.	ONE MILE NORTH-EAST OF CAL-	PERT	IN
Yellow clay	20		EDONIA.		
Micaceous sandstone	3	- 11	Ferruginous conglomerate	?	
White sandy clay	18	Ш	Black clay shale, with carbon-	- 1	
Sandstone	4		aceous matter		(
Gray clay	30	- 11	Gray indurated clay	88	
Conglomerate	?	Ш	Sandy shales	21	(
ļ	-	Ш	Soft sandstone	16	
CEDAR POINT.	- 1	П	]	71	_
Yellow clay	16	- 11	. 1	1	
Red clay	10	- 11	ł	- 1	
Ferruginous sandy shale	12	- fi	i	- 1	
Ferruginous sandstone	2	6	1	- 1	
White sandy clay	27	6	1	- 1	
Bluish clay shale.	28	- 11		į	
bluish ciay shale	20	6		- 1	
	91	6			
M	ASS	AC	COUNTY.		
		IN.		FEET	IN.
	12	0	Conglomerate	5	0
Clay	5	0	Covered slope	85	(
Sandstone conglomerate	17	6	Limestone	8	C
Conglomerate	-	_	[-	48	0
	38	6			
			COUNTY.		
HALF A MILE ABOVE CHESTER. FE	85	IN.	MANSKER'S PLACE. Covered slope	SI	IN O
Marlite	1	6	Sandstone	108	ŏ
imestone	2	ŏ	Limestone	27	Ö
Marlite	ĩ	6	Shale	54	Ö
Cherty beds	6			52	Ö
Herty Deus	5	d	Limestone	92	U
imestone	2		. [-		
Marlite		6		272	0
Limestone	1	0			
Marlite	3	0	J	- 1	
	57	7			
. [ '	01	٩I		~ <u> </u>	
			Digitized by	J0	()

### RANDOLPH COUNTY (Continued).

DETAILS OF THE CHESTER BEDS.	FEET	IN.	•	PEET	IN.
Olay beds stratified	12	8	Brought forward	142	5
Limestone	7	2	Sandy shales	9	Q
Alternations of limestone and		1	Shaly sandstone	10	Q
marlite	9	8	Sandstone	12	0
Marlite	2	6	Limestone	8	•
Limestone		0	Blue clay shale	[ 8 9	0
Covered	88	0	Shaly limestone	9	8
Blue shale, with thin bands of	'	1 11	Blue clay		4
· limestone	48		Shaly limestone		1
Limestone, with cherty bands.	18	oll	Limestone, in thick beds	17	•
Shaly limestone,	8	ol	•		
•				228	6
Carried forward	142	5			_

### ROCK ISLAND COUNTY.

. /	ALONZO BLOSSOM'S PLACE. Soil and drift. Shaly sandstone Bluish sandstone. Blue shale Coal Hack shale. Fire clay	2 4	IN. 6 7 6 4	HALF A MILE EAST OF A. BLOS-F SOM'S PLACE. Soil and drift. Cherty limestone. Shaly sandstone (calcareous), Bituminous slate, with bastard limestone. Blue shale. Coal.	5 2 1 1 4	1m.
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#### HENRY COUNTY.

ALLEN'S PLACE, WEAR GENESEO. Soil and drift		IN.	Brought forwardClayCoal	i 1	IM.
Carried forward	-	-			

#### FRANKLIN COUNTY.

s. w. 1 s. w. 1 sec. 20, r. 7 s. I	PEET	IN.	•	FEET	IN
R. 2 E.		1	Brought forward	18	1
Shale	4	•	Coal		
Sandstone	1	9	Fire-clay	1 1	
Clay slate	1	6	Micaceous shale	4	
Sandstone	ī	- 1	Clay iron ore		1
Gray shale	4		Shale		
Bituminous slate	· 1			<u>                                     </u>	
_					
Carried forward	18	8			

### MADISON COUNTY.

W. ½ S.E. ½ SEC. 6, T. 6 N., R. 10 W. MUHLMANN'S PLACE.	FEET	IN.	S. W. ½ SEC. 8, T. 4 N., R. 5 W. FERGUSON'S PLACE.	FEET	IN.
Soil and drift			Bluish limestone	2	8
Shale	5	8	White clay	1	8
Bituminous slate		6	Bituminous slate	3	4
Coal	2	6	Shale	10	
Fire clay	2	5	Coal	2	10
Cherty beds	3	5		-	_
	14	6		19	6
	SANG	AMO	N COUNTY.		
ILES' COAL BANK, SUGAR CREEK.	FEET	IN.		FEET	IN.
Soil and drift	1		Brought forward	6	
Light colored clay shale	- 7		Blue calcareous clay	2	
Hard blue limestone	1	8	Hard blue limestone	2	
Black slate,	1 3	6	Clay shale	1	(
Black limestone:	1		Black slate	1	
Coal	2		Clay slate		1 8
		_	Coal		1
	14	2	Fire-clay	9	,
BALL'S MILL, SUGAR CREEK.	14		The-clay		
Soil and drift				13	1
Limestone			MENARDS MILL, SANGAMON	10	,
Marly clay shale	1	2			
Candy and black alonghala	1		RIVER.	١.	
Sandy and black clay shale	8	4	Soil and drift clay	1	1
Limestone	. 1	6	Shaly sandstone with calca-		
Sandy shale		10	reous nodules		
Calcareous sandstone			Blue sandy shale	6	
Yellow sandstone	2	8	Sandstone	2	
Sandy shale	4	6		_	-
	23	-	POGEN'S MILL STRUMON	22	
MAGRADY'S OLD MILL.	20	-	YOCUM'S MILL, SANGAMON RIVER.		
Soil and drift		1			
	1 .		Soil and drift clay	1	1
Limestone	4		Argillaceous limestone	1	
Blue shale	16	6	Sandy shale	20	
Sandstone	4			-	-
Sandy shale	1	6		21	
	_		MUD LAKE.		i
And the second second	26		Soil and drift	1	
BELL'S MILL, SUGAR CREEK.		1 1	Sandy shale	4	1 8
Soil and drift	. 0		Thin bedded sandstone	3	
Sandy shale	11	1 11	Sandstone	10	
Thin-bedded sandstone	4		Shaly sandstone	5	
-1	_	_	Black slate	1	
	15		Coal	1	10
LANGFIELD'S COAL BANK.	1		Covered to lake level	15	-
Soil and drift	1	1	COVERCE TO MAKE ICVEST	10	
Limestone	1	1 1		40	-
Blue shale	7	9	ainmount's number aivaivav		1
		711	CARPENTER'S BRIDGE, SANGAMON	1	
Coal Covered to river level	1	10	RIVER.		
Covered to river level	11	8	Soil and drift		
			Blue sandy shale	16	1
of them of the second	22	3	Sandstone, irregularly bedded,		
BRANNER'S MILL SANGAMON			Sandstone in regular layers	14	
RIVER.			Sandstone, thin-bedded	3	
Soil and drift			Sandstone	2	1
Limestone	6		Sandstone flags	8	
			1 2 2	T 0	_
Carried forward			Digitized by GOO	212	

Carried forward.....

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## SANGAMON COUNTY (Continued).

Soil and drift	FEET	IN.	MILLER'S PLACE, HORSE CREEK. Soil and drift	FEET	IN.
Sandy shale	4	1	Sandy shale	2	
Sandstone, thin-bedded	7		Arenaceous limestone	1	6
Sandy shale	16	6	Shaly sandstone	18	6
Covered to river level	27	6	Clay shale	10	6
covered to river level	21	0	Coal		4
	55		Continuition		- 4
RAUCH'S QUARRY, SUGAR CREEK.	12			22	10
Soil and drift			STOVER'S COAL BANK, LICK		
Sandstone	9	-	CREEK.		
Limestone	9	2	Soil and drift		
Black slate	2		Black slate, with black lime-		
Limestone	17		stone	3	
The state of the s	0.40	-	Coal	1	8
Contract of the Contract of th	37	2	Limestone	4	
HILL'S QUARRY, SUGAR CREEK.			Blue shale	12	
Soil and drift				-00	-
Micaceous sandstone	8	0		20	8
Sandstone	1	6	GREENWOLD'S PLACE, BRUSH		
Sandy shale	4	6	CREEK.		
Limestone	1		Soil and drift		
Dark clay shale	100	7	Limestone,	6	
Limestone	4		Marly shale	1	6
- 1000	17		Black slate,		6
	10		Clay shale	1 6	
NEW BRIDGE, SUGAR CREEK.			Limestone	0	
Soil and drift	0	0		15	
Limestone	2 4	6	PEACOCK & CUMMINGS' SHAFT,	15	
Sandy shale	1	0			
Limestone,	3		SPRING CREEK.	5	
Sandy shale	1		SoilBlue sandy shale	45	
Micaceous sandstone	1	6	Dark clay shale	5	
micaceous sandstone		0	Coal	9	2
THE PERSON NAMED IN THE PE	12	6	Fire-clay	3	2
LLOYD & EVAN'S COAL BANK.	12	0	Argillaceous limestone and	9	
Soil and drift				4	
Plack slate	2	10	Red and green clay shale	8	
Black slate	1	10	Black shaly slate	2	6
Coal	0.00	10	Purple clay shale,	5	
Sandy shale	11	0	I diple clay share,	0	1
Sandstone, hard	4	2 4	0 1911	77	8
Shaly sandstone	2	8	JONES' WELL, HORSE CREEK.	"	0
Soft sandstone	6	6		19	
Sandy shale	0	0	Soil and drift clay	12	
	90	1	Sandy shale	12	
100000000000000000000000000000000000000	32	4	Clay shale	12	-
			6 I The second second	43	

### MACOUPIN COUNTY.

N. E. \( \frac{1}{4} \) SEC. 29, T. 10 N., R. 9 W. FEET II   Impure limestone	Brought forward  Blue limestone  Black shale	5 2 1 5	IN. 3
Carried forward	3	13	9.

Blue limestone   3   Blue limestone   3   Black shale   1   Black shale   3   Brown shale   3   Brown shale   3   Brown shale   3   Brown shale   4   Blue shale   9   Grey limestone   2   Black shale   1   Blue shale   9   Grey limestone   2   Black shale   1   Blue shale   1	RELAND'S RAVINE, SOUTH OF	FEET	IN.	SHAFT OF THE NORTHERN ILLI-	FEET	11
Coal		- 1	- 11		-	
andstone			1		6	
durated clays and shales 49 lack slate 25 lack "figure stone" 15 lire-clay 55 lack "figure stone" 16 lire-clay 55 lack "figure stone" 17 lire-clay 55 lack "figure stone" 18 line shale 19 loar hidurated clay 55 lack "figure stone" 18 line shale, with fossils 66 loar 50 loak indurated clay 12 loak shale, with fossils 66 loal 56 loal 57 loal 78 line shale, with coal plants, 78 line shale 22 line shale 25 line shale 25 line shale 26 line shale 27 line lower seventy-five or ighty feet of the above section represents, very nearly, he shaft of the "Little Rock load Mining Company," which as ituated a short distance west of Ireland's ravine.  lorend AT DE SOTO, JACKSON COUNTY. In the Artesian well sunk the this point, several beds of coal were penetrated at various depths, as follows:  list coal at the depth of 68 ft. 36 dt """ 93" 26 th """ 135" 9 th """ 146 line shale 10 line shale 11 line stone 3 liack shale 3 line shale 9 line shale 10 line shale 10 line shale 10 line shale 11 line stone 3 liack shale 9 line shale 10 line shale 10 line shale 10 line shale 11 line stone 3 liack shale 10 line shale 10 line shale 10 line shale 11 line stone 3 liack shale 10 line shale 10 line shale 10 line shale 11 line stone 3 liack shale 11 line stone 3 liack shale 12 line shale 12 line shale 12 line shale 12 line shale 11 line stone 3 liack shale 12 line shale 10 line shale 10 line shale 11 line shale 11 line tock 12 line shale 14 line shale .			1		-1	
Blue shale		100	N.			
Blue limestone   3	ndurated clays and shales	49	- 11	Lime rock	1	
Black shale	Black slate	2	- 11	Blue shale	12	
Black shale	ndurated clay	5	- 11	Blue limestone	3	
Fire-clay   1   1   1   1   1   1   1   1   1	Black "figure stone"	1	- 11	Black shale		
Black shale   Brown shale   3		6	. 1		1	
Brown shale   3   3   3   3   3   3   3   3   3		-	- 11	Black shale	-	
Dark indurated clay.		8	. 11	Brown shale	9	
Black shale, with fossils			- 11			1
Soal			- 11			1
Additione   With coal plants   2   Parayish-blue shale, with septaria   7   10   10   10   10   10   10   10		6	0			
Black Shale   1   1   1   1   1   1   1   1   1			0	Blue shale	-	
Silue shale   10		2,	- 11	Grey limestone		
Silue shale   10	rayish-blue shale, with septa-	1	11	Black Shale	1	
Silve shale			1	Blue "	10	
Blue shale	Blue shale	2		Limerock	3	1
12   3   6   Blue shale   2   2   3   6   Blue shale   6   6   5   6   5   6   6   5   6   6	Black slate	3		Blue shale	10	
The lower seventy-five or lighty feet of the above section represents, very nearly, he shaft of the "Little Rock load Mining Company," which is situated a short distance west of Ireland's ravine.  FORING AT DE SOTO, JACKSON COUNTY.  In the Artesian well sunk this point, several beds of load were penetrated at various depths, as follows:  Ist coal at the depth of 68 ft. 3 dt " " 135" 9 th " " 165" 2 th " " " " 165" 2 th " " " " " " " " " " " " " " " " " "		-		Black limestone		1
The lower seventy-five or ighty feet of the above section represents, very nearly, he shaft of the "Little Rock Loal Mining Company," which is situated a short distance west of Ireland's ravine.  FORING AT DE SOTO, JACKSON COUNTY.  In the Artesian well sunk the this point, several beds of toal were penetrated at various depths, as follows:  Ist coal at the depth of 68 ft. and "" 93 " 25 the "" 165 " 25 the "" 165 " 25 the "" 165 " 25 the thickness of the shale associated with the lower bed not having been ascertained.  Shale with nodules. 4  Blue shale. 10  Red shale. 14  Blue shale. 11  Red shale. 12  Blue shale. 12  Blue shale. 15  Blue shale. 15  Black slate. 4  Coal. 5  Fire-clay 6  Limestone 4  Limestone 4  Black slate. 8  Coal 6  Coal 6  Blue shale. 10  Blue shale. 11  Blue shale. 12  Blue shale.			6	Blue shale		
Blue shale.   10				Shale with nodules		
The lower seventy-five or ighty feet of the above secion represents, very nearly, he shaft of the "Little Rock Coal Mining Company," which is situated a short distance west of Ireland's ravine.  Forming AT DE SOTO, JACKSON COUNTY.  In the Artesian well sunk that this point, several beds of coal were penetrated at various depths, as follows:  Ist coal at the depth of 68 ft. 3 dt " " 135" 9 state of " 155" 9 state of " 165" 9 state of between 16 and 25 feet, the thickness of the shale associated with the lower bed not naving been ascertained.  Red shale. 14  Blue shale. 11  Sandstone 6  Blue shale. 15  Blue shale. 15  Blue shale. 15  Blue shale. 10  Sandstone. 10  Blue shale. 10  Sandstone. 10  Blue shale. 14  Black slate. 8  Black slate. 3  Limestone. 4  Black slate, mixed with coal. 3  Limestone. 3  Shale. 2  Black slate 3  Blue shale. 14  Sandstone 6  Fire-clay 1  Limestone. 4  Black slate, mixed with coal. 3  Limestone. 3  Shale. 2  Black slate 3  Blue shale. 11  Sandstone 6  Blue shale. 12  Limestone 4  Shale, brown 64  Black slate 3  Blue shale. 12  Blue shale. 12  Sandstone 6  Blue shale. 12  Blue shale. 12  Limestone 4  Shale, brown 64  Black slate 3  Blue shale. 12  Blue shale. 12  Sandstone 6  Blue shale. 12  Limestone 4  Shale, brown 64  Black slate 3  Blue shale. 12  Sandstone 6  Blue shale. 12  Sandstone 6  Blue shale. 12  Sandstone 6  Blue shale. 12  Limestone 3  Shale. 3  Shale. 3  Blue shale. 12  Sandstone 6  Blue shale. 12  Limestone 3  Shale. 3  Shale. 3  Blue shale. 12  Sandstone 6  Blue shale. 14  Sandstone 6  Blue shale. 15  Sandstone 6  Blue shale. 12  Sandstone 6  Blue shale. 12  Sandstone 6  Blue shale. 12  Sandstone 10  Sandstone 6  Blue shale. 10  Sandstone 6  Blue shale. 10  Sandstone 6  Blue shale. 10  Sandstone 10  Sands		140		Plue shale		
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Red shale.   14			1 1			1
he shaft of the "Little Rock load Mining Company," which as situated a short distance west of Ireland's ravine.  Form AT DE SOTO, JACKSON COUNTY.  In the Artesian well sunk at this point, several beds of load were penetrated at various depths, as follows:  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 3 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of 68 ft. 4 little shale.  Ist coal at the depth of						
Sandstone 6  Sandstone 6  Blue shale 12  Blue shale 15  Blue shale 16  Limestone 10  Blue shale 10  Sandstone 6  Eire-clay 6  Limestone 10  Blue shale 10  Sandstone 10  Blue shale 11  Black slate 11  Black slate 11  Sandstone 10  Sandstone 10  Blue shale 11  Black slate 11  Black slate 11  Sandstone 10	ion represents, very nearly,			Red shale		
Blue shale   12				Blue shale	11	1
Blue shale   15	Coal Mining Company," which			Sandstone	6	
Blue shale.   15	is situated a short distance west			Blue shale	12	
Black slate.   4   Coal.   5	of Ireland's ravine.			Blue shale	15	
Coal	execution of the factories			Black slate	4	
Fire-clay	RORING AT DE SOTO, JACKSON		1 1			
In the Artesian well sunk this point, several beds of toal were penetrated at various depths, as follows:  Ist coal at the depth of 68 ft. 3 di " " 93 " 2 di " " 135 " 9 di " " 165 " 2 di " " di di " " di di " di			1			
Blue shale   10			1	Limestone		
Sandstone.   10						
Blue shale.   14			1		-	
Black slate			1			
State coal at the depth of 68 ft.   3   Coal   6   Coal   Coal   6   Coal   C	ous depths, as follows:				-	
State   Stat						
Making a total thickness of total of between 16 and 25 feet, that wing been ascertained.   Making been ascertained.   Limestone.   3			1		6	
The color of the shale   14   165   2   16   16   17   17   17   18   18   18   18   18	ou vo		1	Fire-clay	1	
Shale, brown   64	100	9	1	Limestone	4	
Black slate, mixed with coal.   3	th " " 165 "	2	1		64	
Limestone   1	5th " and shale " 216 "	9		Black slate, mixed with coal.	3	
Making a total thicknes of coal of between 16 and 25 feet, the thickness of the shale associated with the lower bed not having been ascertained.   25   Blue shale.   2   Black slate.   3   Blue shale.   14   Sandstone.   8   Blue shale.   18   Black slate.   8   Soapstone.   14		_			100	
Making a total thicknes of coal of between 16 and 25 feet, the thickness of the shale associated with the lower bed not having been ascertained.         Limestone.         3           Shale.         2           Black slate         3           Blue shale.         14           Sandstone.         8           Blue shale.         18           Black slate.         8           Soapstone.         14		95			-	1
Shale	Making a total thicknes of		1 1		0	1
Black slate			1		-	1
Blue shale.						1
Sandstone					100.00	
Blue shale			I			1
Black slate	having been ascertained.		ľĺ		8	1
Soapstone 14				Blue shale	18	
Soapstone 14	_		1	Black slate	8	1
					14	1
					4	1
						-

## GENERAL REMARKS.

THE preceding pages contain only a portion of the sections made during the progress of the Geological survey. Many sections made in the counties named are not given; while a number of counties in which work has been done, are omitted entirely, in consequence of the impracticability of connecting their geology with the coal deposits, without the aid of horizontal sections, and these can only be represented by engravings. They will all be embodied in the final report, together with minute descriptions of the vertical sections now given.

Since the organization of the survey, I have been assisted in the field work by Messrs. A. Varner (deceased), A. H. Worthen, Henry Pratten (deceased), A. H. Ulffers, and J. H. McChesney; and from their notes and reports, most of the sections given were compiled. In the laboratory, Mr. H. Pratten has been the only assistant. The analyses of the Illinois coals

were made by him, as well as those of our iron ores.

The colored diagram of the state is intended to represent, as nearly as so small a scale will allow, the different geological formations found in its borders, and will assist those who may desire to know the geological position of the rocks given in the printed vertical sections.

The portions colored yellow, on the Wabash, Ohio, Mississippi and Illinois rivers, represent the rich alluvial bottoms which border those

streams.

The pink color, found in Alexander, Union, Jersey, Calhoun, Pike, Bureau, La Salle, Grundy, Will, Cook, Kankakee and Iroquois, represents rocks of the Silurian age.

The portions colored with *Indian red*, represent rocks of the *Devonian* epoch, and are to be found in Pulaski, Union, Jersey, Calhoun, Pike,

Rock Island and La Salle.

The blue color, found in our southern and western borders, in the counties of Gallatin, Saline, Hardin, Pope, Johnson, Massac, Pulaski, Union, Jackson, Randolph, Monroe, St. Clair, Madison, Jersey, Greene, Scott, Calhoun, Pike, Brown, Schuyler, Adams, Hancock, McDonough, Henderson, Warren and Mercer, represents the great Carboniferous limestone series, or

"Mountain Limestone," as it is termed by many geologists. In England beds of coal are found in this series of rocks. In this country no coal has yet been discovered in them.

In portions of Gallatin, Hardin, Pope, Saline, Johnson, Massac, Williamson, Union, Jackson, Randolph and Monroe, the "Mountain limestone" series is overlaid with heavy beds of sandstone and sandstone-conglomerate, answering to the "Millstone grit" of some geologists. It is represented by a light shade of sepia skirting the Mountain limestone. This is the base of the coal measures in southern Illinois, no coals existing either in it or below it.

The dark tint of sepia, covering about two-thirds of the area of the state, and including either in whole or in part eighty-one counties, represents the true coal measures of Illinois. The coal measures consist of beds of sandstones, limestones, shales, slates, clays and bands of iron ore, intercallated with beds of coal, from one inch to nine feet in thickness.

In the counties of Massac, Pulaski and Alexander, beginning on the Ohio river south of New Liberty, and following that stream to a point below Caledonia, and then crossing Alexander county in a westerly direction to the Mississippi, near the village of Santa Fe, is a portion of the map colored green. It represents a deposit belonging to the Tertiary period. At one place it contains a thin seam of carbonaceous matter, which was mistaken, by those residing in the vicinity, for coal of the carboniferous era. This, however, is a mistake. It is of no value.

The margin of the coal measures can be easily traced on the diagram in the northern and western counties. On our eastern border, from Iroquois to Gallatin county, they pass over into Indiana, and on the south into Kentucky. In the west, between Keithsburg in Mercer county, and Drury's Landing in Rock Island county, they cross the Mississippi into Iowa. Coal is also found cropping out on the banks of the Mississippi above Rock Island city. A thin seam of coal, associated with clays and shales, was observed at Sterling, in Whiteside county, on the banks of Rock river. What connection it has with the coals of Rock Island and Henry counties, has not been ascertained.

Beginning in Rock Island county and proceeding eastward, the northern limit of the coal (leaving out Whiteside, as just referred to) is found in the counties of Henry, Bureau, La Salle, Grundy and Will, and its northeastern boundary in Kankakee and Iroquois.

In proceeding northerly, in the Mississippi river counties, the "millstone grit," disappears in Munroe county, and the coal measures are separated from the "mountain limestone" by only a few feet (comparatively) of sandstones, shales and clays. Before reaching Rock Island county, the

"mountain limestone" disappears, and on Rock river the coal measures rest on rocks of the Devonian and Silurian epochs; while still further east, in the counties of La Salle, Grundy and Will, the coal beds rest directly on lower Silurian rocks, being separated from them, at some points, by only a few inches of clay.

Workable beds of coal, however, do not underlay the whole area marked as "coal measures." Illinois is not one "great coal field," as has been represented in maps and geological reports made previous to the commencement of the State Geological Survey. While it contains within its borders more coal than any other state in the union, with, perhaps, the exception of Pennsylvania, the coal does not rest in one great basin-So far as the state survey has thrown any light on the subject, it has been found that the rocks beneath the coal measures, instead of showing a nearly horizontal section from east to west, as was formerly believed by some of our geologists, have been in reality as much disturbed by internal convulsions as those of any volcanic district in the United States. The beds of the lower formations, including the mountain limestone and millstone grit, are found, at various localities, displaced and tilted up at every angle from a few degrees to the vertical. These displacements are not confined to any one section. They occur in every district, from the northern limits of the coal beds, to the southern border of the state. In the irregular valleys and basins formed by these disturbances, our lower coal measures were formed. Subsequent to that period, the then existing coal beds were displaced, and eroded, forming new valleys and new basins, which have been filled with new deposits of coal, and so on up to the termination of the carboniferous epoch. An outline of these basins and valleys, so far as ascertained, will be given in the geological report. It must, however, remain imperfect for years to come, as every reëxamination of a coal field develops new facts, which no reasoning from previous data could have brought to light.

The tables of coal beds, from I to IV, were prepared in 1854, and were designed to show the number and thickness of different coal beds found in southern Illinois, along certain lines south of a line drawn from Illinois Town, St. Clair county, to the state boundary in Clark county, west of Terre Haute.

Table I shows the existence of twenty-five beds of coal, varying in thickness from three inches to seven feet, on a direct line drawn from the Ohio river, in the counties named, to "Howard's Point" in Fayette county. Of these beds, nine may be considered as workable by mining, in the proper sense of the term. Of the remaining sixteen, ten are, or may be, worked by "stripping" near their outcrop, where they are cov-

ered by a few feet only of soil and other deposits. The beds capable of being mined, contain forty feet and nine inches of coal. If to this be added the beds capable of furnishing coal by "stripping," this section will show a thickness of available coal of over fifty-five feet.

Table II shows the number of beds found on a line drawn from a point on Big Muddy river, near Murphrysborough, Jackson county, to Griswold's, in Hamilton county. These beds vary from four inches to nine feet in thickness. Two of these beds, amounting to fifteen feet, can be mined profitably, while five of them, from one foot six inches to one foot eight inches in thickness, may be made available, at various places, by either mining or "stripping." The total thickness of coal in this section is twenty-three feet six inches.

Table III exhibits the coal beds found on a line from the "Old Salt Spring," south-east of Equality, Gallatin county, to Parker's Prairie, in Cumberland county. Of these beds, four are workable by mining, varying in thickness from three feet to five feet, and amounting in all to sixteen feet six inches. Four of the others, with a total thickness of seven feet, may be "stripped" in favorable situations. All the beds in this section, sum up a total of twenty-three feet nine inches.

Table IV contains some of the beds found in a section from a point north of Waterloo, Monroe county, to Howard's Point, in Fayette county. Of these, three are from three feet six inches, to six feet nine inches thick, and are mined profitably, the united thickness being sixteen feet nine inches. The other beds vary from one foot three inches to two feet in thickness. The total amount of coal in this section is twenty-three feet two inches.

Since these tables were prepared, other discoveries of coal have been made in several of the counties embraced in them. These cannot now be added, but will be noticed in the detailed geological report. As the tables now stand, however, they are sufficient to show the great number and importance of the coal beds of the district to which they relate.

No tabular view of the coals of middle and northern Illinois has yet been prepared, nor, in fact, has it been desirable to do so up to this time, as new discoveries are constantly being made in those districts, which are calculated to modify, somewhat, the opinions first formed in relation to them.

By reference to the pages of analyses, and the tables on pages 55, 56 and 57, as well as to the vertical sections of the counties in the districts referred to, it will be seen that their coal beds have not been neglected, but have, on the contrary, received their full share of attention in all respects.

In order to embrace as much matter in relation to more recent discov-

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eries as possible, some of the oldest, best and most profitable mines in the state have been passed without notice in this abstract. In the final report they will receive their due share of attention.

In the printed sections, many localities of coal are given in addition to these noticed in the first half of this abstract, together with the thickness of the beds and the character of the rocks associated with them. These coals have not yet been analyzed.

The relative value of Illinois coals can be ascertained by comparing the analytical results given on the pages referred to; and their position with regard to some other American coals, as well as to a few British coals used in the manufacture of iron, can be seen at a glance by consulting the tables on page 58. These analyses show that we have a number of beds of coal in this state, which equal, in every respect, the very best coals of the Mississippi and Ohio valleys. In thickness and other requisites for cheap and profitable mining, they are not surpassed by those of any other portion of the west, and there is only needed enterprise, capital and energy, to develop a source of wealth in our state, at present scarcely thought of, and which is incalculable. The markets are already here, and the supply is so inadequate to the demand, that one Illinois city alone imports annually from other states coal to the amount of over 134,000 tons.

In Knox, Henry and La Salle counties, cannel coal occurs in connection with bituminous beds. Its value may be estimated by comparing the analyses of the different seams, with those given of the same variety of coal from Virginia and Kentucky.

So far as means for the transportation of coal to both home and distant markets are concerned, no state in the union is superior to Illinois. The Ohio, Mississippi and Illinois rivers, Lake Michigan, and all our railroads can be made tributary to this great interest.

J. G. NORWOOD.

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